



Welcome to the 59th ASMS Conference on Mass Spectrometry and Allied Topics. Conference program activities and exhibit booths are in the Colorado Convention Center. Corporate Member hospitality suites are located in the Hyatt Regency Hotel (across 14th Street from the convention center).

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TABLE OF CONTENTS

GENERAL INFORMATION	2
ASMS BOARD OF DIRECTORS.....	4
INTEREST GROUPS AND COMMITTEES.....	5
AWARDS	6
RESEARCH AWARDS	7
CONVENTION CENTER FLOOR PLAN	8
POSTER-EXHIBIT HALL FLOOR PLAN	9
CORPORATE HOSPITALITY SUITES	10
ASMS CORPORATE MEMBERS.....	11
PROGRAM ACKNOWLEDGEMENTS	14
PROGRAM OVERVIEW	15
WORKSHOPS	20

*Titles in the following sections are provided by authors.
The complete abstracts are available online:
www.asms.org*

SUNDAY	23
MONDAY ORAL SESSIONS	23
TUESDAY ORAL SESSIONS	30
WEDNESDAY ORAL SESSIONS	37
THURSDAY ORAL SESSIONS	44
MONDAY POSTERS	52
TUESDAY POSTERS	87
WEDNESDAY POSTERS	122
THURSDAY POSTERS	157
INDEX OF AUTHORS	192

GENERAL INFORMATION

NEW THIS YEAR

"MyASMS" is a comprehensive online map, poster/exhibit guide, session locator and scheduler: www.asms.org. The program is compatible with most mobile devices, as well as your computer.

THIS JASMS SUPPLEMENT is the *only* printed program. Bring this to the conference with you.

REGISTRATION is open 10:00 am - 8:00 pm on Sunday and 7:30 am - 5:00 pm on Monday through Thursday.

SUNDAY TUTORIAL SESSION, 5:00 - 6:30 PM

Wells Fargo Theatre



5:00 - 5:45 pm

Good Mass Spectrometry and its Place in Good Science: Sometimes Close Enough Is Really Not Good Enough

Mark W. Duncan

University of Colorado Denver, Anschutz Medical Campus



5:45 - 6:30 pm

LC and MS: A Match Made in Heaven

James Jorgenson

University of North Carolina

PLENARY SESSIONS, Wells Fargo Theatre

SUNDAY CONFERENCE OPENING, 6:45 - 7:45 PM



Our Stellar Origins Revealed by Stardust Grains

Ernst Zinner

Washington University

MONDAY, 4:45 - 5:30 PM, Robert J. Cotter,

Award for a Distinguished Contribution in Mass Spectrometry

TUESDAY, 4:45 - 5:30 PM, Béla Paizs, Biemann Medal

THURSDAY, 4:45 - 5:30 PM



Why Are We Surprised by Only Some of the Things that We See? Visual Illusions, the Brain, and Baseball

Arthur Shapiro

American University

ORAL SESSIONS are 8:30 - 10:30 am and 2:30 - 4:30 pm Monday through Thursday.

Session A (MOA, TOA, WOA, ThOA), Wells Fargo

Session B (MOB, TOB, WOB, ThOB), Room 501

Session C (MOC, TOC, WOC, ThOC), Room 401

Session D (MOD, TOD, WOD, ThOD), Korbel 1-2

Session E (MOE, TOE, WOE, ThOE), Korbel 3-4

Session F (MOF, TOF, WOF, ThOF), Four Seasons 1-2

Session G (MOG, TOG, WOG, ThOG), Four Seasons 3-4

ORAL PRESENTATIONS are made from ASMS computers running Microsoft Windows 7 and Office 2007. Speakers are required to use the ASMS computers for their presentations.

SPEAKERS must load presentations at least one day prior to their talks. The speaker room is 612 and is open with a technician:

Sunday: 10:00 am - 8:00 pm

Monday through Wednesday: 7:30 am - 5:00 pm

POSTERS AND EXHIBIT BOOTHS are in Exhibit Hall C-D. The Hall is open:

Sunday Reception: 7:45 - 9:30 pm

Monday through Wednesday: 7:30 am - 8:00 pm

Thursday: 7:30 am - 3:30 pm

POSTER SET-UP is 7:30 am on the day scheduled and removal is 7:30 - 8:00 pm. Thursday posters must be removed by 3:30 pm. **Refer to the poster numbers in this final program for board assignments.** Presenters are expected to supply pushpins or Velcro to mount their posters. Poster titles begin on page 52.

POSTER SESSIONS are 10:30 am - 2:30 pm, Monday through Thursday. Presenters should attend their posters 10:30 am - 2:30 pm on their scheduled day. Presenters who must leave a poster unattended should post a return time. Post-it notes for this purpose are provided at the Poster Supply counter near the entrance to the Poster-Exhibit Hall. Presenters should wear "poster presenter" badges which are also available at the counter.

Lunch Breaks for poster presenters

11:45 am - 12:15 pm Break for odd-numbered posters

12:15 - 12:45 pm Break for even-numbered posters

WORKSHOPS are 5:45 - 7:00 pm on Monday, Tuesday, and Wednesday. See pages 20 - 22 for schedule. Light refreshments are provided outside Korbel Ballroom for those attending workshops.

EXHIBIT BOOTHS must be attended as follows:

Sunday Reception: 7:45 - 9:30 pm

Monday through Thursday: 10:30 am - 2:30 pm

FREE INTERNET ACCESS is provided in the Poster-Exhibit Hall.

LUNCH CONCESSIONS are in the Poster-Exhibit Hall. In addition, there are many restaurants close to the convention center.

DINNER BREAK, 7:00 - 8:00 PM is time for a breath of fresh air before the opening of hospitality suites at 8:00 pm. For restaurant suggestions and reservations, visit the Denver Hospitality Counter near the entrance to the Poster-Exhibit Hall.

CONFERENCE PROCEEDINGS will be published online. Visit www.asms.org after July 9 to view and download the Proceedings.

WEB CASTING will include tutorial lectures, plenary lectures, and oral sessions. Web casting will be available to conference attendees until August 12. Web casting of presentations does not constitute publication and in no way jeopardizes the rights of authors to publish material that has been presented. To access the presentations, go to www.asms.org, select web casting, and enter your last name and the User ID on the back of your conference name badge.

GENERAL INFORMATION

SOCIAL ACTIVITIES

- **WELCOME MIXER, SUNDAY, 7:45 - 9:30 PM** *Poster-Exhibit Hall.* Conference name badge is required.
- **GUEST REGISTRATION** (\$10) includes Sunday evening mixer and name badge. Guests are invited to visit the Denver Hospitality counter near the entrance to the Poster-Exhibit Hall to plan excursions.
- **CLOSING TOAST, THURSDAY, 5:30 - 6:00 PM** *Wells Fargo Lobby* is immediately following the closing plenary session.

CORPORATE HOSPITALITY SUITES may be open 8:00 – 11:00 pm, Monday through Wednesday. Suites are located in Hyatt Regency Hotel across 14th Street from the convention center.

EMPLOYMENT CENTER is located in the Poster-Exhibit Hall and is open to all conference attendees. Applicants must supply at least 20 resumés. There are computers in the center for searching the database of candidates and positions. There are poster boards to post positions and messages. Interview booths must be reserved one day in advance.

Sunday: 7:45 - 9:00 pm

Monday – Wednesday: 7:30 am - 5:00 pm

Thursday: 7:30 am - 2:30 pm

CHILDCARE is available in room 301. Advance reservations are required.

CONFERENCE HOTELS

Crowne Plaza	303-573-1450
Curtis	303-571-0300
Embassy Suites	303-592-1000
Grand Hyatt	303-295-1234
Hilton Garden Inn	303-603-8000
Hyatt Regency Conv. Ctr.	303-436-1234
Marriott Downtown Denver	303-297-1300
Sheraton	303-893-3333

TRANSPORTATION

All hotels are within walking distance of the Colorado Convention Center. The convention center is on 14th Street. A free bus runs the length of 16th Street.

CONFERENCE REGULATIONS

- **Name badges** are required for all conference sessions, including the exhibit hall and the employment center.
- **No smoking** is permitted in the convention center.
- **Cell phones** must be turned off in oral sessions.
- **No photography or recording** is allowed in oral sessions or in the Poster-Exhibit Hall.
- The **placement of advertising** in the meeting area is strictly limited to Corporate Members. There are poster boards and tables in the Exhibit Hall for corporate member notices and literature. No signs on easels are permitted.
- **Hardware, accessories** or any items for sale may be displayed only in corporate exhibit booths and hospitality suites.
- **No organized activities** (even off-site) other than those approved by ASMS are allowed during the conference week (5:00 pm on Sunday through 6:00 pm on Thursday).
- **Corporate or institutional logos** in slides or posters may appear only one time in the presentation.

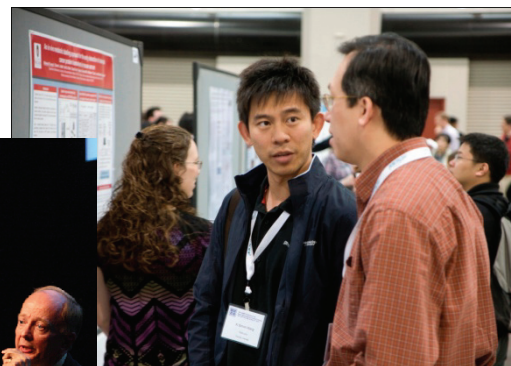
MEDIA EVENTS

Corporate media events are scheduled on Monday and Tuesday in the Hyatt Regency Hotel. Members of the press and financial institutions are welcome.

Company	Date and Time	Hyatt Regency Room
AB SCIEX	Monday, 8:00 - 9:00 am	Centennial A-C, 3 rd Fl
Agilent Technologies	Monday, 1:30 - 2:30 pm	Capitol 1-4, 4 th Fl
Bruker Daltonics	Monday, 11:00 am - 12:00 pm	Mineral Hall A-C, 3 rd Fl
PerkinElmer	Tuesday, 10:00 am - 11:00 am	Centennial G, 3 rd Fl
Shimadzu	Monday, 9:30 - 10:30 am	Capitol 5-7, 4 th Fl
Thermo Scientific	Monday, 3:00 - 4:00 pm	Centennial D, 3 rd Fl
Waters Corporation	Monday, 4:30 - 5:30 pm	Centennial E, 3 rd Fl

DON'T MISS:

- "MyASMS," a comprehensive online map, poster/exhibit guide, session locator and scheduler: www.asms.org. The program is compatible with most mobile devices, as well as your computer.
- Refreshments before the start of workshops on Monday, Tuesday and Wednesday - look for a theme each evening
- A one-hour break between the end of workshops and the opening of corporate hospitality suites to explore "fast" and "fine" restaurants in the area surrounding the convention center
- Hospitality suites in the Hyatt Regency Hotel across 14th Street from the convention center
- Breakfast seminars hosted by some corporate members (reservations required)



ASMS BOARD OF DIRECTORS



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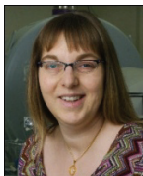
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ASMS

announces the election of these members to the Board of Directors

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<i>DNA/RNA</i>	Daniele Fabris, <i>SUNY, Albany</i> Herbert Oberacher <i>Innsbruck Medical University</i>
<i>Drug Metabolism & Pharmacokinetics</i>	Edward Kerns, <i>Discovery ADME</i> Gabriella Szekely-Klepser, <i>Allergen</i>
<i>Energy, Petroleum & Biofuels</i>	David Stranz, <i>Sierra Analytics</i> Wolfgang Schrader, <i>MPI Muelheim</i>
<i>Environmental Applications</i>	Xing-Fang Li <i>University of Alberta</i>
<i>Flavor, Fragrance and Foodstuff</i>	Eric Handberg <i>1st Detect</i>
<i>Forensics & Homeland Security</i>	Karen Wahl <i>Pacific Northwest Natl. Laboratory</i>
<i>FTMS</i>	Adam Hawkridge <i>North Carolina State University</i> Joshua Sharp, <i>University of Georgia</i>
<i>Fundamentals</i>	Rebecca Jockusch, <i>Univ. of Toronto</i> Daniel Austin, <i>Brigham Young Univ.</i>
<i>Hydrogen Exchange & Covalent Labeling</i>	Janna Kiselar, <i>Case Western Reserve</i> Michael Chalmers, <i>Scripps Institute</i>
<i>Imaging MS</i>	Felicia Green <i>National Physical Laboratory (UK)</i> Timothy Garrett <i>Univ. of Maryland Baltimore Cty.</i>
<i>Ion Mobility MS</i>	Brandon Ruotolo, <i>Univ. of Michigan</i>
<i>Ion Trap MS</i>	Joshua Coon, <i>Univ. of Wisconsin</i>
<i>LC/MS Related Topics</i>	Susan E. Abbatiello, <i>Broad Institute</i>
<i>Metabolomics</i>	Lloyd W. Sumner, <i>Noble Foundation</i> William Wikoff, <i>Univ. of Calif, Davis</i>
<i>Metal Ion Coordination Chemistry</i>	Victor Ryzhov, <i>Northern Illinois Univ.</i> Grant Johnson <i>Pacific Northwest Natl. Laboratory</i>
<i>Peptide Fragmentation</i>	Gavin Reid, <i>Michigan State Univ.</i> Helen J. Cooper <i>University of Birmingham (UK)</i>
<i>Pharmaceuticals</i>	Matthew Blatnik, <i>Pfizer</i> Chris Turck, <i>Max Planck Institute</i>
<i>Protein Therapeutics</i>	Guodong Chen, <i>Bristol-Myers Squibb</i>
<i>Quantitative Intact Proteomics</i>	Mark Chance, <i>Case Western Reserve</i> David Friedman, <i>Vanderbilt Univ.</i>
<i>Regulated Bioanalysis</i>	Fabio Garofolo, <i>Algorithme Pharma</i> Steven Lowes, <i>Advion Biosciences</i>
<i>Undergraduate Research in MS</i>	Jennifer Grant <i>University of Wisconsin</i>
<i>Young Mass Spectrometrists</i>	Huo Chen, <i>Ohio University</i>

COMMITTEES

<i>Asilomar Conference</i>	Rebecca Jockusch, Chair Carolyn Cassidy Facundo Fernandez Gary Glish
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<i>Sanibel Conference</i>	David Burinsky, Chair Lucinda Cohen Lisa Deterding Jianhua Ren

ARCHIVIST

Michael Grayson

AWARD FOR A DISTINGUISHED CONTRIBUTION IN MASS SPECTROMETRY

Award Lecture: 4:45 pm, Monday, Wells Fargo Theatre

2011 Recipient: Robert J. Cotter



Tandem mass spectrometry (MS/MS) is a key tool for molecular structure elucidation. Many instrument configurations are feasible for accomplishing gas-phase analyte selection followed by activation and molecule-specific dissociation. **Robert J. Cotter** is recognized for his invention and development of tandem time-of-flight (TOF/TOF) mass spectrometry that utilizes high-energy collisions (up to 20 keV) for collision-induced dissociation. Cotter's first instrument design, realized in 1993, incorporated two dual-stage reflectrons (rTOF/rTOF), which were later replaced by single-stage reflectrons for improved focusing of product ions over a wider mass range. This work was followed by the development of the "curved-field reflectron" to enable simultaneous focusing of the entire product ion mass range. The curved-field reflectron also gained wide use on post-source decay instruments and was licensed to Kratos Analytical for their *Kompact IV*, *AXIMA CFR* and *AXIMA CFR+* mass spectrometers and then Shimadzu *Confidence* mass spectrometers. A simplified instrument configuration, developed in 2004, was commercialized as the Kratos *AXIMA TOF₂* and later the Shimadzu *Performance*. More than 400 curved field reflectron instruments have been manufactured and sold. The potential benefits of high-energy (20 keV) collisions are now being appreciated, with perhaps the most exciting being the possibility of carrying out "top-down" or "middle-down" protein analyses on a MALDI TOF mass spectrometer.

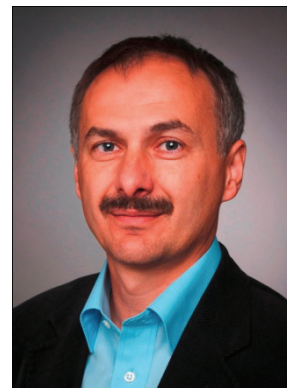
Dr. Robert J. Cotter is Professor of Pharmacology and Molecular Sciences at the Johns Hopkins University School of Medicine.

BIEMANN MEDAL

Award Lecture: 4:45 pm, Tuesday, Wells Fargo Theatre

2011 Recipient: Béla Paizs

Tandem mass spectrometric analysis of peptides, a vital element of proteomics, requires a deep understanding of the complex fragmentation reaction networks occurring in mass spectrometers under various excitation conditions. The focused efforts of **Béla Paizs** have led to detailed characterization of peptide product ion structures and dissociation mechanisms, and have demonstrated that the principle characteristics of peptide collision-induced dissociation spectra can be understood with basic physical and chemical laws. Paizs' work combines various experimental techniques (e.g., MS/MS, "action" infrared multiphoton dissociation, ion mobility spectrometry, gas-phase H/D-exchange) with state-of-the-art theoretical methods. "Raw" experimental data (fragmentation patterns, IR spectra, collision cross-sections, etc.) are processed with the help of advanced modeling and provides invaluable structural, thermodynamic, and kinetic data on peptide fragmentation chemistry. Among other achievements, Paizs has characterized the major fragmentation pathways leading to **b**, **y**, and **a** ions, the scrambling chemistry of **b** fragments, and very recently, he has described a new rearrangement pathway for **a** fragments. His work has unified diverse dissociation mechanisms into a comprehensive peptide fragmentation model. These achievements have substantially advanced the field of peptide characterization and provide a solid scientific background for developing improved bioinformatics tools for peptide sequencing in mainstream proteomics.



Dr. Béla Paizs is Group Leader, Gas-phase Peptide Chemistry Group at the German Cancer Research Center.

RON A. HITES AWARD FOR OUTSTANDING RESEARCH PUBLICATION IN JASMS

Award Presentation: ASMS Meeting, 4:45 – 5:30 pm, Wednesday, Korbel 1-2

The Ron Hites Award recognizes an outstanding presentation of original research. Selection is based on a paper's innovative aspects, technical quality, likely stimulation of future research, likely impact on future applications, and quality of presentation. The award is named in honor of Professor Ronald A. Hites of Indiana University, who led the creation of JASMS in 1988 while president of ASMS.



The 2011 award is presented to **Prof. Scott A. McLuckey** for the article "Top-Down Tandem Mass Spectrometry of tRNA via Ion Trap Collision-induced Dissociation;" Huang, T.-Y., Liu, J., & McLuckey, S. A.; JASMS 2010, Vol. 21(6), 890-898. Prof. McLuckey is in the Department of Chemistry, Purdue University. Prof. McLuckey is donating the award prize of \$2,000 toward student travel support.



AWARDS

RESEARCH AWARDS

ASMS is pleased to announce that Thermo Scientific and Waters Corporation have each increased their Research Awards to \$35,000. Awards will be presented at the Biemann Medal Award Lecture, 4:45 pm, Tuesday, Wells Fargo Theatre.

Sponsored by

THERMO SCIENTIFIC



Judit Villen
University of Washington

Sponsored by

WATERS CORPORATION



Brandon Ruotolo
University of Michigan

CALL FOR 2012 RESEARCH AWARD PROPOSALS

- OBJECTIVE** To promote academic research by young scientists in mass spectrometry.
- ELIGIBILITY** Open to academic scientists within four years of joining the tenure-track faculty or equivalent in a North American university. Applicants may not have previously received an award under this program.
- APPLICATION** Applicants should submit **SEVEN** collated sets of the following
1. One-page fiscal proposal and justification
 2. List of current research support
 3. Three-page proposal, including references and figures
 4. *Curriculum vitae*
 5. Two letters of recommendation (may be sent by email, fax or mail to ASMS)
- DEADLINE** Application materials, including letters of recommendation, must be received in the ASMS office by November 30, 2011. Send to:
ASMS, 2019 Galisteo Street, Building I-1, Santa Fe, NM 87505
- FISCAL** The awards of \$35,000 each will be made to a university in the name of the selected individual and for the researcher's exclusive use. In accepting this award, the institution will agree not to charge overhead on the funds.
- INFORMATION** Contact ASMS. Telephone: (505) 989-4517 • Fax: (505) 989-1073 • office@asms.org

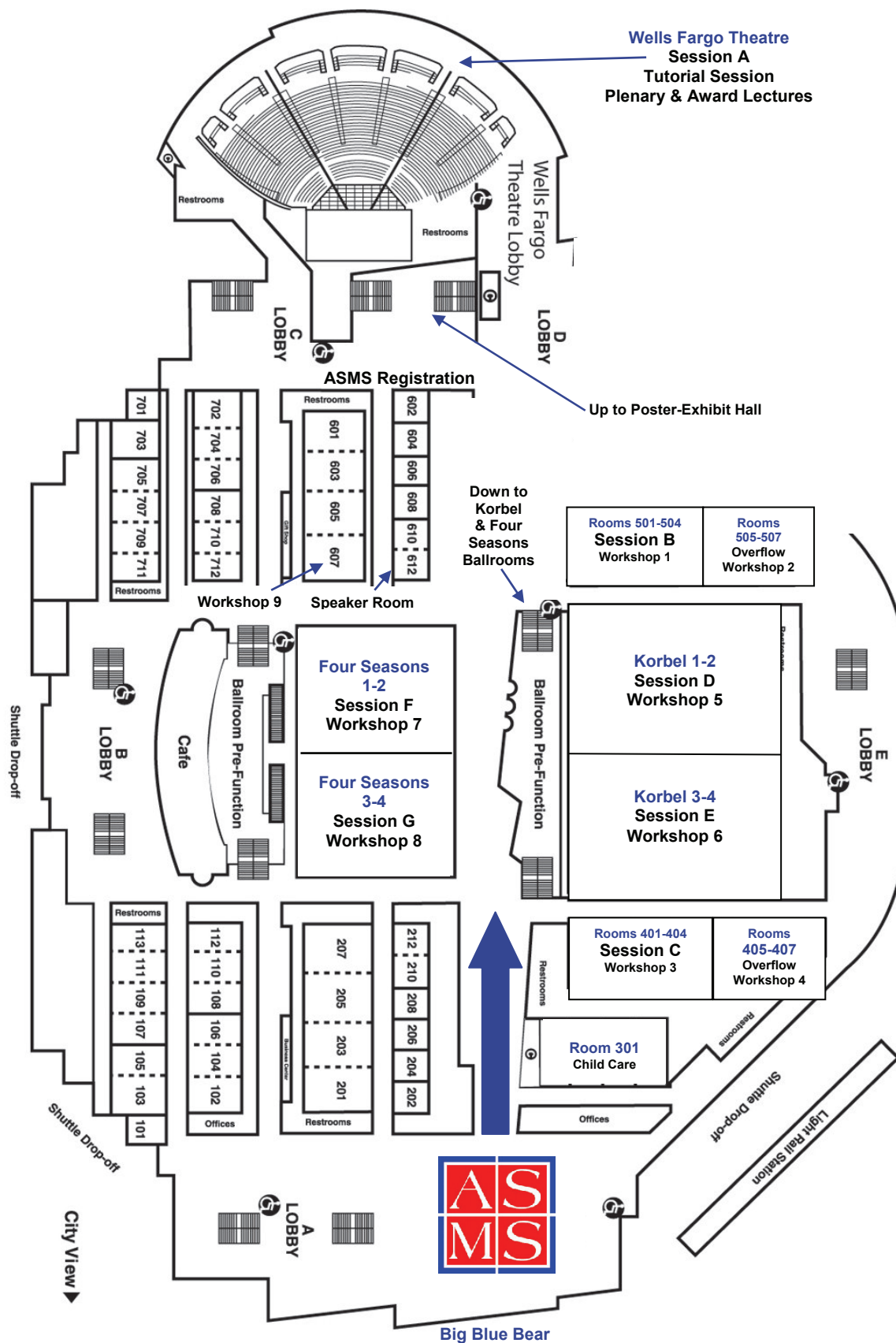
RICHARD A. SCHAEFFER MEMORIAL FUND GRANTS

The Richard A. Schaeffer Memorial Fund provides student travel grants of approximately \$1,000 each. Information and applications are available at www.richardschaeffer.org.

Recipients of the 2011 grants for ASMS Conference Travel

Ryan Dain, *Wichita State University*
Oscar Martinez, Jr, *University of Colorado*
Kevin McAvey, *University of New Orleans*

COLORADO CONVENTION CENTER



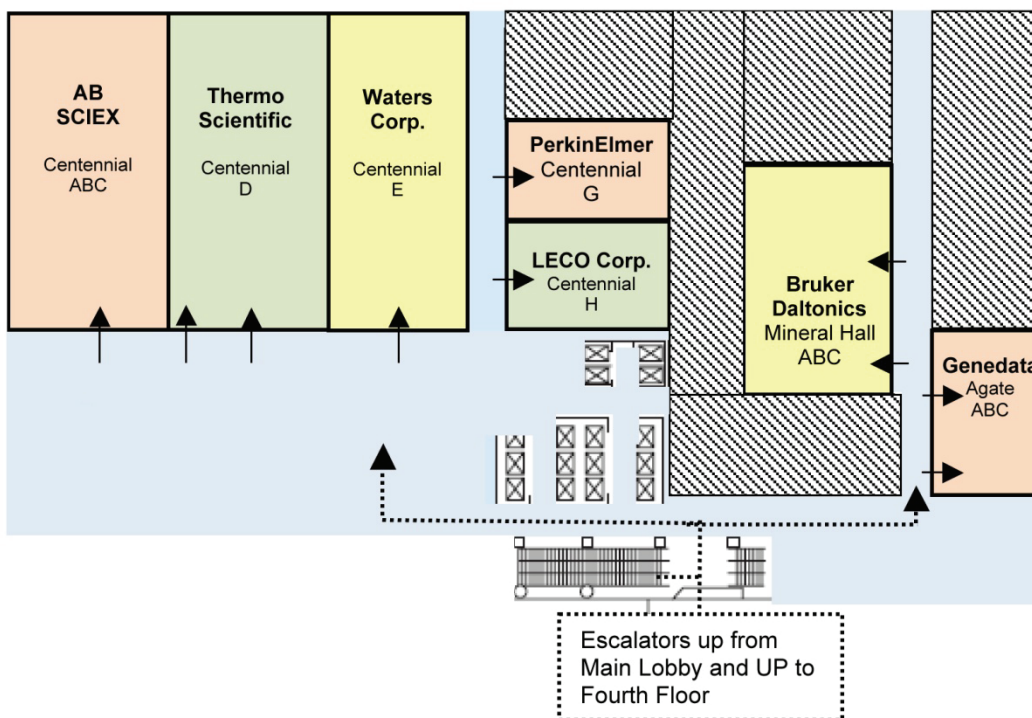
POSTER-EXHIBIT HALL



**Internet
Cafe**

HOSPITALITY SUITES, HYATT REGENCY HOTEL

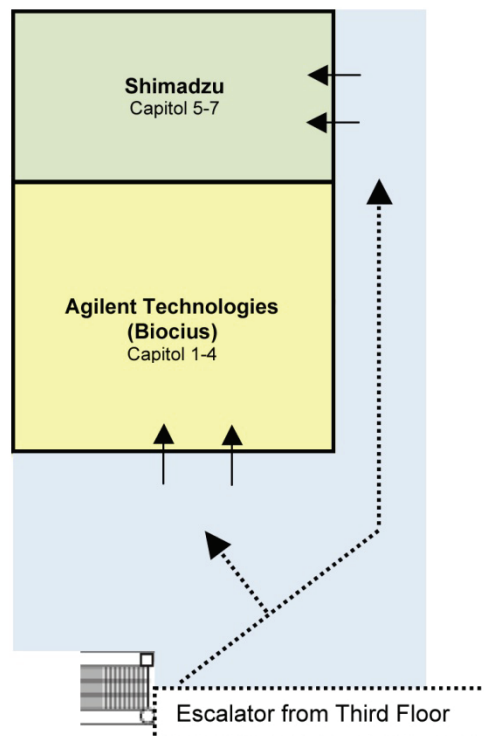
Third Floor



DON'T MISS THE CORPORATE HOSPITALITY SUITES

Located in the Hyatt Regency Hotel third and fourth levels.
Suites are open
Monday – Wednesday after 8:00 pm.
During the day by appointment.

Fourth Floor



ASMS CORPORATE MEMBERS

COMPANY	BOOTH/POSTER/LIBRARY	HYATT REGENCY HOTEL HOSPITALITY SUITE
1st Detect.....	114 / Poster	
AB SCIEX.....	93	Centennial ABC, 3 rd Fl
Advanced Chemistry Development.....	76 / Poster	
Advion.....	164 / Poster	
Agilent Technologies	94 / Poster.....	Capitol 1-4, 4 th Fl
AIM Research Company.....	145	
Alliance Pharma, Inc.	58	
ALMSCO International	42	
Alturas Analytics, Inc.	66	
American Laboratory/Labcompare.....	Library	
American Pharmaceutical Review	Library	
Analytical Bio-Chemistry Lab.....	Poster	
Analytical Sales & Services	73 / Poster	
Antec BV	41 / Poster	
Applied Kilovolts	112 / Poster	
Apricot Designs, Inc.	157	
Aptuit, Inc.	78	
Ardara Technologies LP	165 / Poster	
ASBMB	155	
Beckman Coulter, Inc.	87	
Bio Chromato, Inc.....	34	
BIOCIUS Life Sciences (now part of Agilent Technologies)		
Biocrates Life Sciences AG	47	
Biognosys	28	
Bioinformatics Solutions Inc.	95 / Poster	
Bioreclamation	56	
Biotage.....	101	
BioTechniques	Library	
Bonna-Agela Technologies Inc.	38 / Poster	
Bridger Photonics, Inc.	20	
Bruker Daltonics	63	Mineral ABC, 3 rd Fl
C&EN	37	
CAMAG Scientific, Inc.	82	
Cambridge Isotope Laboratories	105	
Canadian Life Science.....	97 / Poster	
caprotec bioanalytics.....	148 / Poster	
CDS Analytical.....	29	
Cerilliant Corporation	72	
Cerno Bioscience	113	
CETAC Technologies.....	36	
Chemyx, Inc.	57 / Poster	
Chiral Technologies, Inc.....	69	
CovalX	118	
Covance		
Covaris, Inc.	107 / Poster	
Critical Path Services, LLC.....	160	
CSS Analytical Co., Inc.	119	
CTC Analytics	45	
Denator AB	122 / Poster	
Detector Technology, Inc.	9	
Dionex Corporation	124 / Poster	
Edwards	137	
Elforlight Limited	162	
EMD Milipore	144/ Poster	
ESI Source Solutions.....	Poster	
Extrel CMS	55 / Poster	

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Frontage Laboratories, Inc.	15	
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GE Healthcare	27 / Poster	
Genedata, Inc.	89 / Poster	Agate ABC, 2 nd Fl
Genetic Engineering & Biotechnology News	Library	
Geneva Bioinformatics.....	141 / Poster	
GenTech Scientific Inc.	100	
Gerstel, Inc.....	154 / Poster	
GL Sciences	156	
Glygen Corp.....	126 / Poster	
Golden West Biologicals, Inc.	161	
Hamamatsu Corporation.....	30 / Poster	
Harvard Apparatus.....	49	
Honeywell Burdick & Jackson	150	
Horizon Technology, Inc.	25	
Hudson Surface Technology	132 / Poster	
iChrom Solutions	33	
IDEX Health & Science	109 / Poster	
Imtakt USA	149	
INTAVIS, Inc.	120	
Integrated Analysis, Inc.....	62	
Integrated Proteomics Applications Inc.	18	
International Equipment Trading Ltd.	86	
International Labmate, Ltd.....	Library	
Ionicon Analytik GMBH	138 / Poster	
Ionics Mass Spectrometry Group, Inc.	75	
IonSense, Inc.....	133 / Poster	
ITT Power Solutions	85	
JEOL USA, Inc.	51	
JM Science, Inc.	1	
JPT Peptide Technologies	54	
KLAS, LLC Bioanalytical Labs.....	14	
LEAP Technologies	123 / Poster	
LECO Corporation	125 / Poster	Centennial F, 3 rd Fl
Lhasa Limited.....	65 / Poster	
MassTech, Inc.	16	
MathSpec, Inc.	43	
Matrix Science Ltd.	84	
McKinley Scientific, LLC	64	
MestreLab Research	142	
Metabolon, Inc.	24 / Poster	
Michrom Bioresources, Inc	71	
MicroLiter Analytical Supplies, Inc.	10	
Microsaic Systems Limited	19 / Poster	
MPI Research	8	
MS Bioworks	129	
MS Noise	102	
MSP Kofel	130	
mSPEC Group.....	52	
Nanoliter, LLC	17	
Nest Group, The	Poster	
New England Peptide, LLC.....	44	
New Objective, Inc.....	111 / Poster	
NIST	116	
Nonlinear Dynamics	127	
Nusep	146	

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COMPANY	BOOTH/POSTER/LIBRARY	HYATT REGENCY HOTEL HOSPITALITY SUITE
Oerlikon Leybold Vacuum	67	
Omni Enclosures.....	98	
Omni International.....	59 / Poster	
Optimize Technologies, Inc.	103	
Orochem Technologies Inc.	152	
Parker Hannifin	108 / Poster	
PEAK Scientific Instruments	61	
Perfinity Biosciences, Inc.	90 / Poster	
PerkinElmer, Inc.	80 / Poster.....	Centennial G, 3 rd Fl
Pfeiffer Vacuum	134 / Poster	
Phenomenex	121	
Phoenix S & T, Inc	135	
Photonics Media.....	163	
PHOTONIS	140 / Poster	
Phytronix Technologies.....	70	
Polymer Factory	46	
Pressure BioSciences.....	53 / Poster	
Primera Analytical Solutions	21	
Promega Corporation	128	
Prosolia, Inc.....	88 / Poster	
Protea Biosciences, Inc.....	50	
Proteome Software, Inc.....	117	
Proton Energy Systems, Inc.	23	
Research Scientific Services	131	
Resolution Systems.....	39	
RMI Laboratories LLC	13	
Sage-N Research, Inc.....	96	
Scientific Instrument Services	115 / Poster	
Sens-Tech Limited	83 / Poster	
SGE Analytical Science	99 / Poster	
Shimadzu	91 / Poster.....	Capitol 5-7, 4 th Fl
Sierra Analytics	143	
Sigma Life Science.....	81	
Silantes GmbH	136	
Sonation GmbH	48 / Poster	
Spark Holland	106	
SpectralWorks Ltd.....	60	
Spectroscopy Magazine	35	
Spellman High Voltage	159	
Springer Science + Business Media	Library	
St. Jude Children's Research Hospital	158	
SunChrom GmbH.....	31	
Syagen Technology.....	104 / Poster	
Tecan.....	153 / Poster	
Technology Networks Ltd.....	Library	
Thermo Scientific.....	110.....	Centennial D, 3 rd Fl
Thomson Instruments Co.....	147 / Poster	
Tomtec, Inc	32	
Torion Technologies, Inc.	68 / Poster	
Tosoh Bioscience	139	
VICI Valco Instruments	26	
Voltage Multipliers	40	
VRS	77	
Waters Corporation.....	79	Centennial E, 3 rd Fl
Wiley	74	
York Bioanalytical Solutions	151 / Poster	
Zef Scientific, Inc.....	92	

PROGRAM ACKNOWLEDGEMENTS



Susan T. Weintraub
Vice President for Programs

STUDENT ASSISTANTS

Graduate students are assisting with many aspects of the conference, including registration, oral and poster sessions, and the employment center. The students each receive a stipend to assist with their conference expenses. Springer Publishing has generously underwritten the student assistant stipends.

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PROGRAM OVERVIEW

SATURDAY

9:00 AM - 4:30 PM	SHORT COURSES
2:00 - 5:00 PM	REGISTRATION

SUNDAY

9:00 AM - 4:30 PM	SHORT COURSES
10:00 AM - 8:00 PM	REGISTRATION
5:00 - 6:30 PM	<p>TUTORIAL LECTURES, Wells Fargo Theatre</p> <div>  <p>5:00 - 5:45 pm <i>Good Mass Spectrometry and its Place in Good Science: Sometimes Close Enough Is Really Not Good Enough</i> Mark W. Duncan <i>University of Colorado Denver, Anschutz Medical Campus</i></p> </div> <div>  <p>5:45 - 6:30 pm <i>LC and MS: A Match Made in Heaven</i> James Jorgenson <i>University of North Carolina</i></p> </div>
6:45 - 7:45 PM	<p>OPENING, Wells Fargo Theatre Susan T. Weintraub, ASMS Vice President for Programs</p> <p>PLENARY LECTURE</p> <div>  <p>7:00 - 7:45 pm <i>Our Stellar Origins Revealed by Stardust Grains</i> Ernst Zinner <i>Washington University</i></p> </div>
7:45 - 9:30 PM	RECEPTION IN THE POSTER-EXHIBIT HALL, Exhibit Hall C-D

PROGRAM OVERVIEW

MONDAY

7:00 AM - 5:00 PM	REGISTRATION
8:30 - 10:30 AM	ORAL SESSIONS <ul style="list-style-type: none"> • MOA am: Systems Biology/Cellular Pathways, <i>Wells Fargo Theatre</i> • MOB am: H/D Exchange: New Developments in Hardware, Software and Methodology, <i>Room 501</i> • MOC am: Fundamentals of Peptide Fragmentation: Electron-, Photon- and Collision-based Processes, <i>Room 401</i> • MOD am: Imaging MS: Instrumentation and Ionization Sources, <i>Korbel Ballroom 1-2</i> • MOE am: Energy, Petroleum and Biofuels, <i>Korbel Ballroom 3-4</i> • MOF am: Integrated Qualitative and Quantitative LC-MS for Drug Metabolism and Pharmacokinetics, <i>Four Seasons Ballroom 1-2</i> • MOG am: Protein Therapeutics in Drug Discovery and Development: LC-MS Quantification, <i>Four Seasons Ballroom 3-4</i>
10:30 AM - 2:30 PM	POSTER SESSION AND EXHIBITS , <i>Exhibit Hall C-D</i> Monday posters begin on page 52.
2:30 - 4:30 PM	ORAL SESSIONS <ul style="list-style-type: none"> • MOA pm: Post-translational Modifications, <i>Wells Fargo Theatre</i> • MOB pm: H/D Exchange for Protein Structure and Function, <i>Room 501</i> • MOC pm: Fundamentals: Ion Spectroscopy, <i>Room 401</i> • MOD pm: Imaging MS: Biological Applications, <i>Korbel Ballroom 1-2</i> • MOE pm: Plant Proteomics, <i>Korbel Ballroom 3-4</i> • MOF pm: High Resolution MS in Drug Metabolism and Pharmacokinetics, <i>Four Seasons 1-2</i> • MOG pm: Biomarker Quantification: Challenges in Regulated Bioanalysis: LC-MS Quantification, <i>Four Seasons Ballroom 3-4</i>
4:45 - 5:30 PM	AWARD LECTURE , <i>Wells Fargo Theatre</i>  Award for a Distinguished Contribution in Mass Spectrometry <i>Wells Fargo Theatre</i> Robert J. Cotter <i>Johns Hopkins University</i>
5:45 - 7:00 PM	WORKSHOPS See page 20. There are light refreshments outside Korbel Ballroom. <ol style="list-style-type: none"> 1. Fundamentals, <i>Room 501</i> 2. Challenges in Polymer Mass Spectrometry, <i>Room 505</i> 3. The Energy Landscape: Alternatives, Economics, and Analytical Problems in Energy, Petroleum, and Biofuels, <i>Room 401</i> 4. Creating a Parts/Knowledge Resource for Older Instruments, <i>Room 405</i> 5. Applied Topics in FTMS, <i>Korbel Ballroom 1-2</i> 6. Computational Methods for the Interpretation of Ion Mobility-Mass Spectrometry Data, <i>Korbel Ballroom 3-4</i> 7. Simultaneous Qual/Quan Workflows: What Are the Optimal Technologies, Methods, Applications and Real-World Productivity Enhancements? <i>Four Seasons Ballroom 1-2</i> 8. Practical ETD, <i>Four Seasons Ballroom 3-4</i> 9. New Methods for Analysis of Foods, Flavors and Fragrances, <i>Room 607</i>
7:00 - 8:00 PM	DINNER BREAK
AFTER 8:00 PM	CORPORATE HOSPITALITY SUITES , <i>Hyatt Regency Hotel</i>

PROGRAM OVERVIEW

TUESDAY

7:00 AM - 5:00 PM	REGISTRATION
8:30 - 10:30 AM	ORAL SESSIONS <ul style="list-style-type: none"> • TOA am: Quantitative Proteomics: Peptides, <i>Wells Fargo Theatre</i> • TOB am: Unknown Environmental Contaminants: Advanced Mass Spectrometry Technologies, <i>Room 501</i> • TOC am: Metabolomics, <i>Room 401</i> • TOD am: Biomolecular Structure Analysis by Covalent Labeling: Future Directions, <i>Korbel Ballroom 1-2</i> • TOE am: Fundamentals: Supramolecular Chemistry/Non-covalent Interactions, <i>Korbel Ballroom 3-4</i> • TOF am: Mass Spectrometry Analysis of Dried Blood Spot Samples, <i>Four Seasons Ballroom 1-2</i> • TOG am: Clinical Chemistry: Advances in Separation Technologies, <i>Four Seasons Ballroom 3-4</i>
10:30 AM - 2:30 PM	POSTER SESSION AND EXHIBITS , <i>Exhibit Hall C-D</i> Tuesday posters begin on page 87.
2:30 - 4:30 PM	ORAL SESSIONS <ul style="list-style-type: none"> • TOA pm: Informatics: Quantification/Validation, <i>Wells Fargo Theatre</i> • TOB pm: Environmental Chemistry and Health, <i>Room 501</i> • TOC pm: Lipids I: Identification and Structural Analysis, <i>Room 401</i> • TOD pm: Protein-Ligand Interactions: Characterization by Mass Spectrometry, <i>Korbel Ballroom 1-2</i> • TOE pm: Ion Traps and Hybrid Instruments: New Developments, <i>Korbel Ballroom 3-4</i> • TOF pm: Imaging MS: Pharmaceutical Applications, <i>Four Seasons Ballroom 1-2</i> • TOG pm: Advances in Micro- and Nano-scale Separations, <i>Four Seasons Ballroom 3-4</i>
4:45 - 5:30 PM	AWARD LECTURE , <i>Wells Fargo Theatre</i> <div style="display: flex; align-items: center;">  <div> Biemann Medal <i>Wells Fargo Theatre</i> Béla Paizs <i>German Cancer Research Center</i> </div> </div>
5:45 - 7:00 PM	WORKSHOPS See page 21. There are light refreshments outside Korbel Ballroom. <ol style="list-style-type: none"> 1. Hydrogen Exchange and Covalent Labeling, <i>Room 501</i> 2. Advances in Mass Spectrometry Driving Drug and Target Identification Efforts, <i>Room 505</i> 3. Trans-Proteomic Pipeline and Related Open-source Proteomics Resources, <i>Room 401</i> 4. NIH Grant Opportunities and Mock Study Section, <i>Room 405</i> 5. Metabolomics Current Challenges & Future Directions, <i>Korbel Ballroom 1-2</i> 6. Clinical Protein and Peptide Analysis: When, Where and How? <i>Korbel Ballroom 3-4</i> 7. Is a Deeper Understanding of Peptide Fragmentation Chemistry Required to Improve MS/MS-based Protein Identification and Characterization Strategies? <i>Four Seasons Ballroom 1-2</i> 8. Upcoming Challenges and Developments in Regulated LC-MS Bioanalysis: Fit-for-Purpose; Emerging Technologies; Stability Issues, <i>Four Seasons Ballroom 3-4</i> 9. LC/MS Library/Libraries for Advancing Environmental Chemistry and Health Sciences, <i>Room 607</i>
7:00 - 8:00 PM	DINNER BREAK
AFTER 8:00 PM	CORPORATE HOSPITALITY SUITES , <i>Hyatt Regency Hotel</i>

PROGRAM OVERVIEW

WEDNESDAY

7:00 AM - 5:00 PM	REGISTRATION
8:30 - 10:30 AM	ORAL SESSIONS <ul style="list-style-type: none"> • WOA am: Intact Proteins: Quantitative and Qualitative Analysis, <i>Wells Fargo Theatre</i> • WOB am: Ion Mobility Separations: Fundamentals and Instrumentation, <i>Room 501</i> • WOC am: Lipids II: Profiling and Quantitation, <i>Room 401</i> • WOD am: Glycoproteins: New Approaches for Structure Analysis, <i>Korbel Ballroom 1-2</i> • WOE am: Instrumentation: New Developments in Ionization, <i>Korbel Ballroom 3-4</i> • WOF am: PK Assays: Novel Approaches to Increase LC-MS Throughput, <i>Four Seasons Ballroom 1-2</i> • WOG am: Protein Therapeutics: Structural Characterization, <i>Four Seasons Ballroom 3-4</i>
10:30 AM - 2:30 PM	POSTER SESSION AND EXHIBITS , <i>Exhibit Hall C-D</i> Wednesday posters begin on page 122.
2:30 - 4:30 PM	ORAL SESSIONS <ul style="list-style-type: none"> • WOA pm: Phosphoproteomics, <i>Wells Fargo Theatre</i> • WOB pm: Ion Mobility Mass Spectrometry: Integration into Structural Biology, <i>Room 501</i> • WOC pm: Fundamentals: Ion-Surface Interactions and Preparative MS, <i>Room 401</i> • WOD pm: Carbohydrates: New Approaches for Structure Analysis, <i>Korbel Ballroom 1-2</i> • WOE pm: Instrumentation: New Developments in Instrumentation, <i>Korbel Ballroom 3-4</i> • WOF pm: Informatics Tools for Pharmaceutical Applications of Mass Spectrometry, <i>Four Seasons Ballroom 1-2</i> • WOG pm: Reactive Metabolites: Novel LC-MS Detection Methods, <i>Four Seasons Ballroom 3-4</i>
4:45 - 5:30 PM	ASMS MEETING , <i>Korbel 1-2</i>
5:45 - 7:00 PM	WORKSHOPS See page 22. There are light refreshments outside Korbel Ballroom. <ol style="list-style-type: none"> 1. Towards Quantitative Imaging, <i>Room 501</i> 2. Nucleic Acids Sequencing: Fundamentals and New Directions, <i>Room 505</i> 3. Applications and Challenges in Forensics and Homeland Security related to Mass Spectrometry, <i>Room 401</i> 4. Quantitative Intact Proteomics (QIP), <i>Room 405</i> 5. Hot Topics in LC-MS Instrumentation Troubleshooting, <i>Korbel Ballroom 1-2</i> 6. Bonding Theory And Application: Algorithm Development and Implementation Licensing, <i>Korbel Ballroom 3-4</i> 7. Qualitative and Quantitative Techniques for Protein Therapeutics, <i>Four Seasons Ballroom 1-2</i> 8. Career Development in Mass Spectrometry Research, <i>Four Seasons Ballroom 3-4</i> 9. Interaction of Metal Ions and Clusters with Biomolecules, <i>Room 607</i> 10. Group Discussion to Generate Workshop Content to Stimulate Undergraduate Student Interest in Mass Spectrometry, <i>Room 711</i>
7:00 - 8:00 PM	DINNER BREAK
AFTER 8:00 PM	CORPORATE HOSPITALITY SUITES , <i>Hyatt Regency Hotel</i>

PROGRAM OVERVIEW

THURSDAY

7:00 AM - 5:00 PM	REGISTRATION
8:30 - 10:30 AM	ORAL SESSIONS <ul style="list-style-type: none"> • ThOA am: Informatics: Identification, <i>Wells Fargo Theatre</i> • ThOB am: Fundamentals: Ion Structure and Energetics, <i>Room 501</i> • ThOC am: Synthetic Polymers: New Methods for Analysis, <i>Room 401</i> • ThOD am: Membrane Proteins, <i>Korbel Ballroom 1-2</i> • ThOE am: High Mass Accuracy/High Performance Instrumentation and Applications, <i>Korbel 3-4</i> • ThOF am: Protein Therapeutics: Identification of Metabolites, Impurities and Degradants, <i>Four Seasons Ballroom 1-2</i> • ThOG am: Biomarker Analysis and Metabolomics in Drug Discovery, <i>Four Seasons Ballroom 3-4</i>
10:30 AM - 2:30 PM	POSTER SESSION AND EXHIBITS, Exhibit Hall C-D Thursday posters begin on page 157.
2:30 - 4:30 PM	ORAL SESSIONS <ul style="list-style-type: none"> • ThOA pm: Biomarkers/Disease Signatures, <i>Wells Fargo Theatre</i> • ThOB pm: Fundamentals: Ion/Molecule and Ion/Ion Interactions, <i>Room 501</i> • ThOC pm: Microorganisms: Identification and Characterization, <i>Room 401</i> • ThOD pm: Oligonucleotides: Structure and Reactivity, <i>Korbel Ballroom 1-2</i> • ThOE pm: Metal-Biomolecular Complexes: Structure and Reactions, <i>Korbel Ballroom 3-4</i> • ThOF pm: Biomarkers of Drug/Metabolite Toxicity: LC-MS Methods, <i>Four Seasons Ballroom 1-2</i> • ThOG pm: Ambient Desorption Ionization Techniques: New Developments and Applications, <i>Four Seasons 3-4</i>
4:45 - 5:30 PM	PLENARY LECTURE, Wells Fargo Theatre  <i>Why Are We Surprised by Only Some of the Things that We See? Visual Illusions, the Brain, and Baseball</i> Arthur Shapiro <i>American University</i>
5:30 - 6:30 PM	CLOSING TOAST, Wells Fargo Lobby

MONDAY WORKSHOPS, 5:45 - 7:00 pm

Workshops are organized on topics of special interest to mass spectrometry.
Light refreshments are provided outside Korbel Ballroom.

FUNDAMENTALS

Daniel Austin and Rebecca Jockusch, presiding
Room 501

In the tradition of the fundamentals workshop, we will encourage young mass spectrometrists to give short presentations on topics of interest to generate an informal discussion. While the exact topics are dependent on the choice of oral presentations at ASMS, we expect that new developments in the understanding of ionization techniques, ion mobility and ion spectroscopy will feature prominently.

CHALLENGES IN POLYMER MASS SPECTROMETRY

Andrew Hoteling and William Erb, presiding
Room 505

THE ENERGY LANDSCAPE: ALTERNATIVES, ECONOMICS, AND ANALYTICAL PROBLEMS IN ENERGY, PETROLEUM, AND BIOFUELS

Wolfgang Schrader and David Stranz, presiding
Room 401

In this time of energy uncertainty, many potential new sources to supplement or replace the geopetroleum-based energy supply are being explored. This workshop will present, in tutorial format, a review of the current and future energy landscape: sources, alternatives, economics and scalability, and the analytical challenges faced at the research and production levels. Audience participation will be encouraged.

CREATING A "PARTS/KNOWLEDGE RESOURCE" FOR OLDER INSTRUMENTS

John Greaves, presiding
Room 405

Many instruments are being called on to last well beyond the instrument development cycle. This may mean that after several years use it can become hard to obtain both spares and information on any given model. It is proposed that we discuss how to create and maintain a database of instruments (maybe older than 5 years), locations and users with the aim that a user in trouble may have a information/parts resource. The database should include that instrument in the basement that is no longer used but could provide a wealth of parts for others.

APPLIED TOPICS IN FTMS

Adam Hawkrige and Joshua Sharp, presiding
Korbel Ballroom 1-2

An anonymous web-based survey was conducted in early 2010 which provided members of the FTMS community the opportunity to suggest topics for the 2010 and 2011 Workshops. Based on the responses to this survey, the 2011 Workshop will focus on specific applications and capabilities that are unique to FTMS. The format of the 2011 Workshop will include 3-4 short talks that cover contemporary applications that will allow ample time for discussion.

COMPUTATIONAL METHODS FOR THE INTERPRETATION OF ION MOBILITY-MASS SPECTROMETRY DATA

Brandon T. Ruotolo, presiding
Korbel Ballroom 3-4

With the availability of commercial ion mobility-mass spectrometry (IM-MS) instrumentation, the application of IM-MS data to a host of problems in wide-ranging fields is growing at an exponential rate. However, these emerging datasets have highlighted the fact that the growing IM-MS community needs both 1) a deeper understanding of the computational tools already available to analyze IM-MS data and 2) new computational approaches capable of analyzing IM-MS data derived from these emergent datasets. This workshop seeks to showcase both tutorial presentations and cutting-edge research involving the computational analysis of IM-MS data. Discussion in this workshop will be focused on the areas of: molecular modeling/molecular dynamics for the generation of candidate structures in comparison with IM data, theoretical methods for computing the collision cross-section of model structures, and new computational methods that enable the analysis of previously problematic IM-MS datasets.

SIMULTANEOUS QUAL/QUAN WORKFLOWS: WHAT ARE THE OPTIMAL TECHNOLOGIES, METHODS, APPLICATIONS AND REAL-WORLD PRODUCTIVITY ENHANCEMENTS?

Gabriella Szekely-Klepser and Ed Kerns, presiding
Four Seasons Ballroom 1-2

The qualitative identification of xenobiotic metabolites and the quantification of the significant ones together with the parent drug remains an important deliverable for practitioners in this area of the pharmaceutical industry. New instrument platforms are capable of the simultaneous collection of qualitative and quantitative data at low and high resolution enabling more complete understanding of PK/PD relationships and drug disposition. This workshop is going to invite an open discussion on key technological advances, new approaches, and open or controversial questions in these areas. Topics or questions will be presented by the moderators and invited subject matter experts in short (~ 5 min) presentations which will be followed by discussion with the audience.

PRACTICAL ETD

Katalin Medzihradsky, presiding
Four Seasons Ballroom 3-4

This workshop will focus on the practical aspects of ETD analysis. Invited speakers will make short presentations (max 5 min) to illustrate the advantages and limitations of ETD analysis including: special applications for PTM analysis, database searching strategies, as well as unexpected fragmentations and other practical problems.

NEW METHODS FOR ANALYSIS OF FOODS, FLAVORS AND FRAGRANCES

Eric Handberg, presiding
Room 607

Method developments in mass spectrometry continue to improve for the Food, Flavor and Fragrance Interest Group. These methods include broadly applicable LC-MS/MS methods and new ionization methods, such as surface desorption atmospheric pressure chemical ionization (DAPCI) and extractive electrospray. This workshop aims to bring together analysts and experts to discuss practical applications to volatile compounds important to the flavor, fragrance and food area. Attendees are invited to share relevant challenges and problem-solving techniques in an open discussion format. We hope to use the Interest Group's Forum page at the ASMS web site for advance discussion of specific topics and techniques.

Workshops are organized on topics of special interest to mass spectrometry.
Light refreshments are provided outside Korbel Ballroom.

HYDROGEN EXCHANGE AND COVALENT LABELING

Michael Chalmers and Janna Kiselar presiding
Room 501

The workshop will focus on the discussion of new methods and techniques of interest to our members. There will be a brief overview of a new method development, followed by questions and discussion. Topics will be selected to allow interaction between speakers and the audience.

**ADVANCES IN MASS SPECTROMETRY DRIVING DRUG AND
TARGET IDENTIFICATION EFFORTS**

Matthew Blatnik and Chris Turck, presiding
Room 505

Current therapeutic strategies are shifting from small molecule to peptide and large molecule based programs. The instrumentation and strategies for investigating new targets and relationships is evolving. This workshop will focus on current mass spectrometry applications in the industry and how they are being used to solve complex biological and therapeutic problems.

**TRANS-PROTEOMIC PIPELINE AND RELATED OPEN-SOURCE
PROTEOMICS RESOURCES**

Eric Deutsch, presiding
Room 401

This is a tutorial-style presentation on how to use the freely available and open-source suite of software tools for the analysis of proteomics shotgun datasets called the Trans-Proteomic Pipeline (TPP). The presentation will include demonstrations of use of format conversions, PeptideProphet, iProphet, ProteinProphet, and related tools through the TPP graphical user interface, both in a local installation and on the Amazon EC2 cloud computing platform. Next we will present examples of how to use other resources from the Seattle Proteome Center including PeptideAtlas and SRMAtlas for the planning of targeted proteomics experiments. The workshop will conclude with an open discussion on use of the tools, possible improvements, as well as future directions. There will be an opportunity to talk with the developers of the TPP.

NIH GRANT OPPORTUNITIES AND MOCK STUDY SECTION

Douglas Sheeley and Charles Edmonds, presiding
Room 405

**METABOLOMICS CURRENT CHALLENGES &
FUTURE DIRECTIONS**

Lloyd W. Sumner and William R. Wikoff, presiding
Korbel Ballroom 1-2

The objective of this workshop is to gather together active metabolomics researchers to discuss the current challenges and future directions of the field in the presence of those who wish to learn more about metabolomics. Key topics of discussion will include current challenges, metabolomics standards, metabolomics databases and repositories, and metabolite identification/annotation. A panel will guide the discussion, and a substantial proportion of the allotted time will be allocated for audience feedback. Thus, bring your comments and we look forward to your participation.

**CLINICAL PROTEIN AND PEPTIDE ANALYSIS:
WHEN, WHERE AND HOW?**

Nigel Clarke and Russ Grant, presiding
Korbel Ballroom 3-4

Over the last few meetings we have discussed the current state of play in diagnostics with regards to small molecules and automation. The next frontier is developing validated assays for clinical measurement of proteins and peptides. This is critical to both replace the current RIAs and ICMA (due to their specificity issues etc) as well as for the development of new disease biomarkers. To this end we will be inviting panelists from academic, industry and regulatory

backgrounds to give a brief (5 min) presentation each and then partake in a question and answer discussion with the audience.

**IS A DEEPER UNDERSTANDING OF PEPTIDE FRAGMENTATION
CHEMISTRY REQUIRED TO IMPROVE MS/MS-BASED
PROTEIN IDENTIFICATION AND CHARACTERIZATION**

STRATEGIES?

Gavin Reid, presiding
Four Seasons Ballroom 3-4

This workshop will provide a forum to discuss the status of ongoing efforts to systematically characterize peptide sequence- and modification-dependent fragmentation patterns, and to debate whether continued efforts are required in order to improve the utility of in silico fragmentation models incorporated into database search and scoring algorithms or *de novo* sequencing strategies for reliable and comprehensive protein identification and characterization, particularly for peptides that currently yield low or insignificant search scores. The discussion will be facilitated by short informal presentations to be given by invited experts in the field.

**UPCOMING CHALLENGES AND DEVELOPMENTS IN
REGULATED LC-MS BIOANALYSIS: FIT-FOR-PURPOSE;
EMERGING TECHNOLOGIES; STABILITY ISSUES**

Stephen Lowes and Fabio Garofolo, presiding
Four Seasons Ballroom 1-2

Recent public comment from representatives of FDA have indicated forthcoming regulatory guidance will address emerging approaches and techniques for the quantitative bioanalysis of drugs, metabolites and biomarkers. Considering the challenges to current regulatory language that endogenous biomarkers, biotherapeutics and non-triple quadrupole instruments present, makes for lively discussion around the future developments of bioanalysis. This workshop will highlight three areas of particular current interest:

1. Fit-for-Purpose and how to accommodate in a regulated laboratory.
 2. Integration of emerging and new technologies for quantitative bioanalysis including dried blood spot assays and application of high resolution instruments.
 3. Is it time to re-think our stability method validation experiments?
- This is an educational forum to discuss issues and applications associated with the LC-MS/MS Bioanalysis. The scientific debate will be led by three panelists who are recognized international experts in the field who will introduce each of the above topics to engage discussion.

**LC/MS LIBRARY/LIBRARIES FOR ADVANCING
ENVIRONMENTAL CHEMISTRY AND HEALTH SCIENCES**

Enrico Davoli and Xing-Fang Li, presiding
Room 607

Research in environmental and health sciences has greatly benefited from the NIST GC/MS library. Many compounds are not volatile or thermally stable to allow for GC/MS detection. This problem can be overcome by advanced LC/MS technologies. However, recent research has shown that identification of unknowns in a sample is a challenge. LC/MS libraries are very useful to confront this challenge. Industrial partners have developed LC/MS libraries with their specific instrumentation, but it is difficult to perform inter-laboratory validation. How can both academic and industry work together to build a unified LC-MS library from the available libraries to advance environmental and health sciences?

WEDNESDAY WORKSHOPS, 5:45 - 7:00 pm

Workshops are organized on topics of special interest to mass spectrometry.
Light refreshments are provided outside Korbel Ballroom.

TOWARDS QUANTITATIVE IMAGING

Felicia Green, presiding
Room 501

The use of mass spectrometry for the imaging of surfaces has seen rapid growth in recent years and is capable of providing detailed chemical maps of a drug and/or its metabolites, a peptide, biomarkers or a cosmetic ingredient across a sample of tissue or even the distribution of an additive in a polymer. This is a powerful tool for disease studies or product development, but there is an increasing need to provide quantitative image analysis. This workshop will discuss the current thinking, ideas and future needs to enable fully quantitative imaging mass spectrometry.

NUCLEIC ACID SEQUENCING: FUNDAMENTALS AND NEW DIRECTIONS

Herbert Oberacher and Daniele Fabris, presiding
Room 505

Obtaining sequence information is a critical step in the characterization of all biopolymers, including DNA and RNA. Over the years, the MS community has developed gas-phase as well as solution approaches for sequencing nucleic acids and locating their post-transcriptional modifications. The panel will review the fundamentals and discuss the merits of the different approaches. The panel will also present new directions and discuss the changing needs of this field of applications.

APPLICATIONS AND CHALLENGES IN FORENSICS AND HOMELAND SECURITY RELATED TO MASS SPECTROMETRY

Karen Wahl, presiding
Room 401

This workshop will provide information to the attendees on the daily activities and challenges in the fields of forensics and homeland security from various speakers representing government agencies. There are many ways that mass spectrometry tools are applied to help provide information and solutions. Information gained from the chemistry and biology must also be combined with other information such as traditional fingerprint or text analysis or regulations for final solutions and outcomes to problems.

QUANTITATIVE INTACT PROTEOMICS (QIP)

David Friedman and Julian Whitelegge, presiding
Room 405

We will continue the open forum format that we started with last year, during which the discussion was directed by topics submitted to the QIP Interest Group ahead of time. Major themes from last year's workshop will be explored further, including experimental design, replicates, variation, resolving multiple proteins identified from 2Dgels, and quantitative issues related to top-down strategies. Additional topics and panel participants will be selected from the presentations given during the "Intact Proteins: Quantitative and Qualitative Analysis" Wednesday morning oral session.

HOT TOPICS IN LC-MS INSTRUMENTATION TROUBLESHOOTING

Susan Abbatiello, presiding
Korbel Ballroom 1-2

Working from the success of the "Hot Topics" LC-MS workshop in 2010, the 2011 workshop will again focus on problem areas in instrument troubleshooting. Areas of discussion will include use and development of proper standards for LC-MS applications including MS tuning and optimization, troubleshooting low MS signal, ionization source cleaning, and chromatographic irreproducibility. A panel of experts will be prepared for general, as well as specific discussions of problem spots with the current state of technology. In addition, the workshop will begin with three student presentations related to LC-MS research.

BONDING THEORY AND APPLICATION: ALGORITHM DEVELOPMENT AND IMPLEMENTATION LICENSING

Marc Kirchner and Brian Searle, presiding
Korbel Ballroom 3-4

The Bioinformatics interest group will feature two sets of very brief, pecha kucha-style kick-off talks combined with in-depth discussion sessions. We will debate algorithmic issues associated with peptide- and protein-level quantification (such as the implicit identification problem). In addition, we will attempt to spark some discussion about software licensing and its effects on algorithm implementation availability for academia and industry.

QUALITATIVE AND QUANTITATIVE TECHNIQUES FOR PROTEIN THERAPEUTICS

Jon Williams and Sheng Gu, presiding
Four Seasons Ballroom 1-2

This workshop is intended to provide a forum to discuss and share new and emerging methodologies used to analyze protein therapeutics by mass spectrometry. The session will be designed to give scientists who work with these materials a chance to share their experiences in quantitative and qualitative analysis of these materials. We will also encourage discussion on regulatory hurdles that need to be overcome for these types of therapeutics.

CAREER DEVELOPMENT IN MASS SPECTROMETRY RESEARCH

Bich Vu and Hao Chen, presiding
Four Seasons Ballroom 3-4

Scientists in mass spectrometry from both academics and industry will be invited to answer the questions from young scientists who are interested in career development. Short Powerpoint presentations are also in consideration for the workshop.

INTERACTION OF METAL IONS AND CLUSTERS WITH BIOMOLECULES

Grant E. Johnson and Victor Ryzhov, presiding
Room 607

The workshop will serve as an informal venue (especially for young scientists) to discuss metal ion- and cluster-related topics. Typical subjects include ion formation, reactivity, structure and energetics studied by mass spectrometry and complementary techniques (ion spectroscopy and theoretical calculations). The focus of the 2011 workshop will be on the interaction of metal ions and clusters with various classes of biomolecules (amino acids, peptides, proteins, carbohydrates, oligonucleotides). Some of the potential topics include metal ion-assisted fragmentation of biomolecules, structure and thermochemistry of metal ion-biomolecule complexes, clustering of biomolecules around metal ions, hydration of biomolecule/metal complexes, and optical properties of metal cluster-biomolecule hybrids.

GROUP DISCUSSION TO GENERATE WORKSHOP CONTENT TO STIMULATE UNDERGRADUATE STUDENT INTEREST IN MASS SPECTROMETRY

Jennifer Grant, presiding
Room 711

We will use this workshop to generate educational materials to stimulate undergraduate students' interest in mass spectrometry, taking advantage of colleagues' specific expertise. This material might be used in future workshops aimed at undergraduates, perhaps at colleagues' home institutions. The focus will be geared towards promoting mass spectrometric research at undergraduate-focused institutions.

SUNDAY and MONDAY MORNING ORAL SESSIONS

TUTORIAL SESSION

5:00-6:30 pm

Susan T. Weintraub, University of Texas Health Science Center, *presiding*
Wells Fargo Theatre



5:00 - 5:45 pm

Good Mass Spectrometry and its Place in Good Science: Sometimes Close Enough Is Really Not Good Enough

Mark W. Duncan

University of Colorado Denver, School of Medicine



5:45 - 6:30 pm

LC and MS: A Match Made in Heaven

James Jorgenson

University of North Carolina

CONFERENCE OPENING AND PLENARY SESSION

6:45 - 7:00 pm

Susan T. Weintraub, University of Texas Health Science Center, San Antonio, *presiding*
Wells Fargo Theatre



Our Stellar Origins Revealed by Stardust Grains

Ernst Zinner

Washington University

SYSTEMS BIOLOGY/CELLULAR PATHWAYS

8:30 - 10:30 am

Nathan A. Yates, Merck & Co., Inc., *presiding*
Wells Fargo Theatre

- MOA am 8:30 **The Role of MS-based Proteomics in Systems Biology**; Steven Gygi; Ronghu Wu; Noah E. Dephore; Wilhelm Haas; Mathew Sowa; *Harvard Medical School, Boston, MA*
- MOA am 8:50 **Analysis of the Endogenous Human Regulatory Complexome**; Anna Malovannaya; Rainer Lanz; Sung Yun Jung; Nguyen T. Le; Yaroslava Bulynko; Doug W. Chan; Chen Ding; Yi Shi; Yi Wang; Bert W. O'Malley; Jun Qin; *Baylor College of Medicine, Houston, TX*
- MOA am 9:10 **A Dynamic Model of Proteome Changes Reveals New Roles for Transcript Alteration in Yeast**; M. Violet Lee; Scott Topper; Shane Hubler; Craig Wenger; Audrey Gasch; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- MOA am 9:30 **Quantitative Phosphoproteomics Defines Novel Substrates and Functional Modules of the Aurora and Polo-like Kinases in Mitosis**; Arminja Kettenbach; Devin Schweppe; Brendan Faherty; Dov Pechenick; Alexandre Pletnev; Scott A. Gerber; *Dartmouth Medical School, Hanover, NH*
- MOA am 9:50 **Quantitative Affinity Proteomics Identifies Substrates of RNF146, a Poly(ADP-ribose)-Directed E3 Ubiquitin Ligase that Regulates Axin Degradation and Wnt Signaling**; Yue Zhang; Jason Murphy; Elizabeth McWhinnie; Yan Feng; Feng Cong; Markus Schirle; *Novartis, Cambridge, MA*
- MOA am 10:10 **Protein Conformational Ensembles and their Utility in Defining Signaling Pathways**; Graham M West¹; Michael J. Chalmers¹; Bruce D. Pascal¹; Karsten Melcher²; Ellen Y. T. Chien³; H. Eric Xu²; Raymond C. Stevens³; Patrick R. Griffin¹; ¹*The Scripps Research Institute, Scripps Florida, Jupiter, FL*; ²*Van Andel Research Institute, Grand Rapids, MI*; ³*The Scripps Research Institute, La Jolla, CA*

MONDAY MORNING ORAL SESSIONS

H/D EXCHANGE: NEW DEVELOPMENTS IN HARDWARE, SOFTWARE AND METHODOLOGY

8:30 – 10:30 am

Matthew B. Renfrow, University of Alabama-Birmingham, *presiding*
Room 501

- MOB am 8:30 **High Sensitivity On-line Deuterium Exchange Mass Spectrometry Using a Microfluidic Platform;** Terry Lee¹; Yunan Miao ¹; Kossi Lekpor¹; Reid A. Brennen²; Hongfeng Yin²; Kevin Killeen²; Sheng Li³; Tracy Handel³; Virgil Woods, Jr. ³; ¹*City of Hope, Duarte, CA*; ²*Agilent Labs, San Jose, CA*; ³*University of California, San Diego, La Jolla, CA*
- MOB am 8:50 **A Histidine H/D Exchange Strategy for the Thermodynamic Analysis of Protein Folding and Ligand Binding;** Duc Tran; Michael Fitzgerald; *Duke University, Durham, NC*
- MOB am 9:10 **Software for the Analysis of Large HDX Datasets;** Bruce D Pascal; Scooter Willis; Michael J Chalmers; Janelle Lauer; Rachelle R Landgraf; Graham M West; Scott Novick; Patrick R Griffin; *The Scripps Research Institute, Scripps Florida, Jupiter, FL*
- MOB am 9:30 **Combining ESI Supercharging with Top-Down HDX-MS of Proteins and Complexes;** Harry J. Sterling; Catherine A. Cassou; Evan R. Williams; *University of California, Berkeley, CA*
- MOB am 9:50 **Expanding the Utility and Flexibility of a Commercial HDX MS Automation Solution;** Eric Monroe¹; Peter Smith²; Peter Prevelige¹; ¹*Univ. Alabama - Birmingham, Birmingham, AL*; ²*LEAP Technologies, Carrboro, NC*
- MOB am 10:10 **Hydrogen Exchange Analysis at Single-Residue Resolution by ETD and Supplemental Activation in Tandem Travelling Wave Ion Guides;** Kasper D. Rand¹; Steven D Pringle³; Michael Morris³; John R. Engen²; Jeffery M. Brown³; ¹*Swiss Institute of Bioinformatics, Lausanne, Switzerland*; ²*Northeastern University, Boston, MA*; ³*Waters MS Technologies Centre, Manchester, UK*

FUNDAMENTALS OF PEPTIDE FRAGMENTATION: ELECTRON, PHOTON- AND COLLISION-BASED PROCESSES

8:30 – 10:30 am

Nicolas Polfer, University of Florida, *presiding*
Room 401

- MOC am 8:30 **Structure and Formation of a_n^* Ions of Protonated Peptides;** Bela Paizs¹; Benjamin Bythell²; Alex G. Harrison³; Philippe Maitre⁴; ¹*DKFZ, Heidelberg, Heidelberg, Germany*; ²*National High Magnetic Field Laboratory, Tallahassee, FL*; ³*University of Toronto, Toronto, ON*; ⁴*Laboratoire de Chimie Physique, Orsay, France*
- MOC am 8:50 **Statistical Study of Electron Transfer Dissociation Pairwise Fragmentation Patterns;** Wenzhou Li¹; Chi Song²; George C. Tseng²; Joshua J. Coon³; Vicki H. Wysocki¹; ¹*University of Arizona, Tucson, AZ*; ²*University of Pittsburgh, Pittsburgh, PA*; ³*Univ of Wisconsin-Madison, Madison, WI*
- MOC am 9:10 **Excited State Trajectories of Electron-Based Peptide Dissociations;** Christopher Moss; *University of Washington, Seattle, WA*
- MOC am 9:30 **Negative Ion Electron Capture Dissociation (niECD) of Disulfide-Linked Peptide Anions;** Ning Wang; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*
- MOC am 9:50 **Femtosecond Laser-induced Ionization/Dissociation Tandem Mass Spectrometry (fs-LID-MS/MS) of Multiply Deprotonated Phosphopeptide Anions;** Scott Smith; Li Cui; Gavin E. Reid; *Michigan State University, East Lansing, MI*
- MOC am 10:10 **Direct Elucidation of Disulfide Bond Partners Using Ultraviolet Photodissociation Mass Spectrometry;** Arun Agarwal¹; Jolene Diedrich²; Ryan R. Julian³; ¹*University of California at Riverside, Riverside, CA*; ²*University of CA, Riverside, Riverside, CA*; ³*University of California, Riverside, Riverside, CA*

MONDAY MORNING ORAL SESSIONS

IMAGING MS: INSTRUMENTATION AND IONIZATION SOURCES

8:30 – 10:30 am

Timothy Garrett, University of Florida, *presiding*
Korbel Ballroom 1-2

- MOD am 8:30 **Strategy for Laser Ablation MS Imaging with Subwavelength Spatial Resolution;** Renato Zenobi; Liang Zhu; Thomas Schmitz; Rolf Dietiker; Joachim Koch; Detlef Günther; Frank Krumeich; *ETH Zurich, Switzerland*
- MOD am 8:50 **Direct Fragmentation from Tissue by Combining CASI (Continuous Accumulation of Selected Ions) and SORI-CID: Structural Validation of Ion Images;** Jeffrey Spraggins¹; Shannon Cornett²; Peggi Angel¹; Richard M. Caprioli¹; ¹*Vanderbilt University, Nashville, TN*; ²*Bruker Daltonics Inc., Fairview, TN*
- MOD am 9:10 **Nanospray Desorption Electrospray Ionization: a New Technique for Ambient Imaging Mass Spectrometry;** Julia Laskin¹; Patrick Roach¹; Brandi Heath¹; Jeramie Watrous²; Pieter Dorrestein²; Lisa H. Cazares³; Oliver John Semmes³; ¹*Pacific NW National Laboratory, Richland, WA*; ²*University of California, San Diego, Skaggs School, La Jolla, CA*; ³*Eastern Virginia Medical School, Norfolk, VA*
- MOD am 9:30 **High Performance Chemical Imaging: C₆₀ SIMS FT-ICR Mass Spectrometry;** Donald Smith¹; Errol Robinson¹; Aleksey Tolmachev¹; Christian Berg²; Ron M.A. Heeren³; Ljiljana Pasa-Tolic¹; ¹*Pacific Northwest National Laboratory, Richland, WA*; ²*Bruker Daltonics Inc., Billerica, MA*; ³*FOM Institute AMOLF, Amsterdam, Netherlands*
- MOD am 9:50 **Mass Spectrometry Imaging with High Resolution in Mass and Space (HR² MSI) - A New Level of Information and Validity;** Andreas Römpf; Sabine Guenther; Yvonne Schober; Julia Kokesch; Dhaka Bhandari; Zoltan Takats; Bernhard Spengler; *Justus Liebig University, Giessen, Germany*
- MOD am 10:10 **Imaging Mass Spectrometry (MS) at Atmospheric and Intermediate Pressure using Laserspray Ionization (LSI);** Sarah Trimpin; *Wayne State University, Detroit, MI*

ENERGY, PETROLEUM AND BIOFUELS

8:30 – 10:30 am

David Stranz, Sierra Analytics, Inc., *presiding*
Korbel Ballroom 3-4

- MOE am 8:30 **Quantitative Analysis of Aromatic Compounds in Petroleum by Fourier Transform Ion Cyclotron Resonance Mass Spectrometry;** Hendrik Muller; Hanadi Al-Jawad; Frederick Adam; Adnan Al-Hajji; *Saudi Aramco, Dhahran, Saudi Arabia*
- MOE am 8:50 **The Petroleum: The Structural Fouling Deposits during Crude Oil Production;** Wolfgang Schrader; Dominick Brandin; *Max-Planck Inst für Kohlenforschung., Mülheim / Ruhr, Germany*
- MOE am 9:10 **The Petroleum: The Structural Continuum of Petroleum Revealed by Exhaustive Tandem FT-ICR Mass Spectrometry;** Ryan P. Rodgers^{1,2}; Amy M. McKenna¹; Joshua J. Savory¹; Nathan K. Kaiser¹; Esha Atolia³; Christopher L. Hendrickson^{1,2}; Alan G. Marshall^{1,2}; ¹*National High Magnetic Field Laboratory, Tallahassee, FL*; ²*Department of Chemistry and Biochemistry, FSU, Tallahassee, FL*; ³*Massachusetts Institute of Technology, Cambridge, MA*
- MOE am 9:30 **Comprehensive Petroleomic Characterization of Biomass Pyrolysis Using FT-ICR and its Insights into Bio-oil Aging;** Erica Smith^{1,2}; Marge Rover³; Sunitha Sadula³; Christopher Thompson⁴; Robert Brown³; Young Jin Lee^{1,2}; ¹*Chemistry Department, Iowa State University, Ames, IA*; ²*Ames Lab US-DOE, Ames, IA*; ³*CSET, Iowa State University, Ames, IA*; ⁴*Bruker Daltonics, Inc., Billerica, MA*
- MOE am 9:50 **A New Strategy for Molecular Characterization of Fossil Organic Matter using NMR Techniques in Combination with Ultrahigh Resolution Mass Spectrometry;** Elodie Salmon¹; Françoise Behar²; Patrick Hatcher¹; ¹*Old Dominion University, Norfolk, VA*; ²*IFP Energies Nouvelles, Rueil-Malmaison, France*
- MOE am 10:10 **Characterization of Algal Biofuel and Feedstocks;** F. Omar Holguin; Uriel Ortega-Rodriguez; Tanner Schaub; *New Mexico State University, Las Cruces, NM*

MONDAY MORNING ORAL SESSIONS

INTEGRATED QUALITATIVE AND QUANTITATIVE LC-MS FOR DRUG METABOLISM AND PHARMACOKINETICS

8:30 – 10:30 am

Joanna Pols, Merck and Co., Inc., *presiding*
Four Seasons Ballroom 1-2

- MOF am 8:30 **High Resolution Mass Spectrometry for Structural Elucidation and Quantitation of Drugs and their Metabolites based on Multiple MS and MS/MS Workflows;** Gerard Hopfgartner; Emmanuel Varesio; *University of Geneva, Geneva, Switzerland*
- MOF am 8:50 **A New Direction for Integrating Qualitative and Quantitative Bioanalysis;** Anthony Barros Jr¹; Ragu Ramanathan¹; Yuan-Qing Xia¹; Mohammed Jemal¹; Nirmala Raghavan¹; Asoka Ranasinghe¹; Timothy Olah¹; William Humphreys¹; Suma Ramagiri²; ¹*Bristol-Myers Squibb Company, Princeton, NJ*; ²*AB SCIEX, Concord, ON*
- MOF am 9:10 **Combining Non-selective and Selective Fragmentation and High Resolution Accurate Mass for Metabolite Screening and Identification in Early *in vitro* Studies;** Tim Stratton¹; Yingying Huang¹; Markus Kellmann²; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*Thermo Fisher Scientific, Bremen, Germany*
- MOF am 9:30 **High Throughput Screening of CYP Inhibition using a Cocktail Assay: Application of High-Resolution Mass Spectrometry to Sensitive Metabolite Quantification;** Hong Cai; Ming Yao; Jonathan L. Josephs; Mingshe Zhu; *Bristol-Myers Squibb, Pennington, NJ*
- MOF am 9:50 **Enabling 2 Minute Metabolite Identification Workflows using High Resolution UPLC, QTOF and MS^E;** Mark D. Wrona¹; Jeff Goshawk²; Stephen McDonald¹; Alan Millar¹; ¹*Waters Corporation, Milford, MA*; ²*Waters, Manchester, UK*
- MOF am 10:10 **Bridging the Quant to Qual Gap in Pharmaceutical Research Using a Novel High Speed, High Sensitivity QqTOF Mass Analyzer;** Loren Olson¹; John Maynard²; Shaila Hoque²; Hesham Ghobarah¹; Elliott Jones¹; Heather Zhang²; George Tonn²; John-Michael Sauer²; Patrick J. Rudewicz²; ¹*AB SCIEX, San Jose, CA*; ²*Elan Pharmaceuticals, South San Francisco, CA*

PROTEIN THERAPEUTICS IN DRUG DISCOVERY AND DEVELOPMENT: LC-MS QUANTIFICATION

8:30 – 10:30 am

Hui Wei, Bristol-Myers Squibb, *presiding*
Four Seasons Ballroom 3-4

- MOG am 8:30 **Application of ¹⁸O-CASIL (Comparative Analytics using ¹⁸O Stable Isotope Labeling) to Biotherapeutic Development;** R. Matthew Fesinmeyer; Kenneth Daugherty; Sabine Hogan; Himanshu Gadgil; *Amgen, Seattle, WA*
- MOG am 8:50 **Quantitation of Human Growth Hormone (hGH) in Human Serum using an Immunoaffinity LC-MRM Hybrid Assay;** Shanhua Lin; Kumar Shah; Junlong Shao; Moucun Yuan; Patricia Paterson; Rand Jenkins; *PPD, Richmond, VA*
- MOG am 9:10 **An Improved SPE/LC/MS/MS Platform for the Quantification of Amyloid Beta Peptides in Cerebrospinal Fluid;** Erin E. Chambers¹; Mary E. Lame²; Diane Diehl¹; Sarah Grimwood²; ¹*Waters Corporation, Milford, MA*; ²*Pfizer Global Research & Development, Groton, CT*
- MOG am 9:30 **LNA Oligonucleotides: Quantitative LC-MS/MS Approaches to Gaining Sensitivity in Various Matrices;** Elisabeth Lonie; Dawn Dufield; *Pfizer, Andover, MA*
- MOG am 9:50 **LC-MS/MS to Quantify Therapeutic Antibodies in Preclinical Samples: a Generic Approach Using a Common Antibody Reference Standard and Internal Standard;** Michael Hall; *Amgen, Thousand Oaks, CA*
- MOG am 10:10 **Accelerated Method Development for Sensitive, Accurate and Reproducible Quantification of Therapeutic Monoclonal Antibodies in Various Tissues Using Orthogonal-array-optimization and Nano-LC/SRM-MS;** Xiaotao Duan^{1,2}; Lubna Abuqayyas^{1,2}; Joseph P. Balthasar^{1,2}; Jun Qu^{*1,2}; ¹*University at Buffalo, Amherst, NY*; ²*CoE in Bioinformatics&Life Sciences, Buffalo, NY*

MONDAY AFTERNOON ORAL SESSIONS

POST-TRANSLATIONAL MODIFICATION

2:30 – 4:30 pm

Karl Mechtler, IMP Research Institute, *presiding*
Wells Fargo Theatre

- MOA pm 2:30 **Characterizing Gas-Phase Rearrangements of Arginine-Phosphorylated Peptides and their Influence on Phosphorylation Site Localization;** Andreas Schmidt¹; Gustav Ammerer¹; Karl Mechtler²; ¹CD-Laboratory for Proteome Analysis, Vienna, Austria; ²IMP Research Institute of Mo, Vienna, Austria
- MOA pm 2:50 **Proteome-Wide Detection and Quantification of Isoaspartyl Residues in Blood Plasma of Alzheimer's Disease Patients;** Hongqian Yang; Yaroslav Lyutvinskiy; David Good; Roman Zubarev; Karolinska Institutet, Stockholm, Sweden
- MOA pm 3:10 **Identification and Verification of Lysine Succinylation as a Novel *in-vivo* Protein Post-Translational Modification;** Minjia Tan; Zhihong Zhang; Zhongyu Xie; Lunzhi Dai; Yue Chen; Yingming Zhao; Ben May Department for Cancer Research, The University of Chicago, Chicago, IL
- MOA pm 3:30 **New Mass Spectrometry Approach to Identify SUMOylated Peptides from Large-Scale Proteomics Analyses Using a LTQ-Orbitrap Velos;** Eric Bonneil¹; Chantal Durette¹; Louiza Mahrouche^{1,2}; Pierre Thibault^{1,2}; ¹IRIC-Université de Montréal, Montréal, Canada; ²Department of Biochemistry, Université de Montréal, Montréal, Canada
- MOA pm 3:50 **Large-scale Endogenous S-nitrosylation Analysis of Mouse Spleen;** Miao Liu; Ibrahim Younos; Hong Peng; Xin Huang; Lin Huang; Kai Fu; Zhixin Zhang; James Talmadge; Shi-Jian Ding; University of Nebraska Medical Center, Omaha, NE
- MOA pm 4:10 **Quantification of 10,000 Mouse Liver Phosphorylation Sites in Response to Insulin Stimulation by Spike-in SILAC and HCD-Orbitrap MS;** Matthias Mann; Max Planck Institute for Biochemistry, D Martinsried, Germany

H/D EXCHANGE FOR PROTEIN STRUCTURE AND FUNCTION

2:30 – 4:30 pm

Vicki H. Wysocki, University of Arizona, *presiding*
Room 501

- MOB pm 2:30 **Structural Dynamics of Membrane Proteins and Neurotoxic Aggregates Probed by Conformer-Specific HDX Mass Spectrometry;** Lars Konermann¹; Jingxi Pan²; Yan Pan²; Leonid Brown³; Christoph H. Borchers⁴; Jun Han⁵; ¹Univ. of Western Ontario, London, CANADA; ²University of Western Ontario, London, ON; ³University of Guelph, Guelph, ON; ⁴UVic-GBC Proteomics Centre, Victoria, BC; ⁵University of Victoria-Genome BC Proteomics Centre, Victoria, BC
- MOB pm 2:50 **Sub-Second Deuterium-Exchange Mass Spectrometry Reveals Intact Protein-Dependent Differential Solvent Accessibilities of Multiple Protease Cleavage Site Domains in the Proenkephalin Prohormone;** W. Douglas Lu¹; Tong Liu²; Sheng Li²; Virgil Woods²; Vivian Hook¹; ¹Skaggs School of Pharmacy, Univ. of Cal. San Diego, La Jolla, CA; ²School of Medicine, Univ. of Cal. San Diego, La Jolla, CA
- MOB pm 3:10 **Activation and Inhibition of Type-I insulin-like Growth Factor Receptor Differentially Alters Conformation and Influences Asymmetric Behavior;** Damian Houde; Stephen Demarest; Biogen Idec, Cambridge, MA
- MOB pm 3:30 **Fragment-based Approach for Inhibitor Design by Amide Hydrogen/Deuterium (H/D) Exchange Mass Spectrometry;** Srinath Krishnamurthy¹; Anna Jansson²; Steven A. Cohen³; Ganesh Anand¹; ¹National University of Singapore, Singapore, Singapore; ²Nanyang Technological University, Singapore, Singapore; ³Waters Corporation, Milford, MA
- MOB pm 3:50 **Structure to Function; Use of Limited Proteolysis and Hydrogen Exchange Mass Spectrometry to Understand Virus Capsid Assembly and Cell Entry;** Brian Bothner¹; Navid Movahed¹; Vamsee Rayaprolu¹; Jonathan K. Hilmer¹; Dewey Brooke¹; Adam Zlotnick²; Mavis Agbandje-McKenna³; ¹Montana State University, Bozeman, MT; ²Indiana University, Bloomington, IN; ³University of Florida, Gainesville, FL
- MOB pm 4:10 **The Utility of Hydrogen Exchange Mass Spectrometry in Structural Genomics: The PGAM5 Story;** Sean R. Marcisin¹; Apirat Chaikuad²; Sarah Picaud²; Ivan Alfano²; Murakami Shiori³; Kosuke Takeda³; Hidenori Ichijo³; Panagis Filippakopoulos²; Stefan Knapp²; John R. Engen¹; ¹Northeastern University, Boston, MA; ²Structural Genomics Consortium, Oxford, UK; ³University of Tokyo, Tokyo, Japan

MONDAY AFTERNOON ORAL SESSIONS

FUNDAMENTALS: ION SPECTROSCOPY

2:30 – 4:30 pm

Robert C. Dunbar, Case Western Reserve University,
presiding
Room 401

- MOC pm 2:30 **Ion Spectroscopy - an Overview;** John R. Eyler¹; Ashley Awartani¹; Cesar Contreras^{1,2}; Marcus Tirado¹; Alfred Yeung³; Jeffrey Steill^{4,5}; Giel Berden⁴; Jos Oomens^{4,6}; Nicole Horenstein¹; ¹University of Florida, Gainesville, FL; ²NASA Ames Research Center, Moffett Field, CA; ³Carelon College, Northfield, MN; ⁴FOM Rijnhuizen, Nieuwegein, Netherlands; ⁵Sandia/Callifornia, Livermore, CA; ⁶University of Amsterdam, Amsterdam, Netherlands
- MOC pm 2:50 **Structure and Reactivity of Cysteine-Containing Radical Ions Studied by Ion Spectroscopy and Ion-Molecule Reactions;** Victor Ryzhov¹; Sandra Osburn¹; Jos Oomens²; Richard A. J. O'hair³; ¹Northern Illinois University, Dekalb, IL; ²FOM Rijnhuizen, Nieuwegein, Netherlands; ³University of Melbourne, Victoria, Australia
- MOC pm 3:10 **Conformation-Specific Spectroscopy of Cold Peptide Fragment Ions;** Tobias Wassermann; Thomas Rizzo; Ecole Polytechnique Fédérale de Lausanne, CH-1015 Lausanne, Switzerland
- MOC pm 3:30 **Fluorescence and Fluorescence Resonance Energy Transfer (FRET) Measurements of Mass-Selected Gaseous Ions;** Rebecca A. Jockusch; Martin F. Czar; Francis O. Talbot; University of Toronto, Chemistry Department, Toronto, Canada
- MOC pm 3:50 **Spectroscopic Evidence for A Triplet Ground State in Dehydrogenated Polyaromatic Cations;** Hector Alvaro Galue¹; Jos Oomens^{1,2}; ¹FOM Rijnhuizen, Nieuwegein, Netherlands; ²University of Amsterdam, Amsterdam, Netherlands
- MOC pm 4:10 **Vibrational Spectroscopy of Dipeptides Using Infrared Photodissociation of Cryogenic, H₂-Tagged Ions;** Michael J. Van Stipdonk¹; Christopher Leavitt²; Michael Kamrath²; Etienne Garand²; Arron Wolk²; Mark Johnson²; ¹Wichita State University, Wichita, KS; ²Yale University, New Haven, CT

IMAGING MS: BIOLOGICAL APPLICATIONS

2:30 – 4:30 pm

Rachel O. Loo, UCLA, *presiding*
Korbel Ballroom 1-2

- MOD pm 2:30 **2 and 3-Dimensional Mapping of Metabolic Interactions in Microbial Communities;** Jeramie Watrous³; Theodore Alexandrov²; Pieter Dorrestein¹; ¹University of California, San Diego, Skaggs school, La Jolla, CA; ²University of Bremen, Bremen, Germany; ³UCSD, La Jolla, CA
- MOD pm 2:50 **MALDI Mass Spectrometry Imaging of Secreted Lipopeptides in a Bacterial Biofilm Colonizing Plant Roots;** Delphine Debois¹; Emmanuel Jourdan²; Marc Ongena³; Edwin De Pauw¹; ¹University of Liege - LSM / GIGA-R, Liege, Belgium; ²University of Liege - CWBI, Liege, Belgium; ³University of Liege - Gembloux Agro-BioTech, Gembloux, Belgium
- MOD pm 3:10 **Multiple Changes in Peptide and Lipid Expression Associated with Regeneration in the Nervous System of the Medicinal Leech by MSI;** Céline Meriaux¹; Karim Arafah¹; Aurélie Tasiemski¹; Maxence Wisztorski¹; Jocelyne Bruand²; Céline Wichlacz-Boidin¹; Annie Desmons¹; Delphine Debois^{3,4}; Olivier Laprèvote^{3,5}; Alain Brunelle³; Eduardo Macagno²; Isabelle Fournier^{1,6}; Michel Salzet^{1,6}; ¹FABMS, Université Lille1, Villeneuve D'Ascq, FRANCE; ²UCSD, La Jolla, CA; ³Centre de Recherche de Gif, ICSN-CNRS, Gif Sur Yvette, France; ⁴LSM-CART-GIGA-R, University of Liège, Liège, Belgium; ⁵Université Paris Descartes, Paris, France; ⁶Imabiotech, Villeneuve D'Ascq, France
- MOD pm 3:30 **Alterations of Striatal Dynorphin Peptide Levels in L-DOPA-induced Dyskinesia Revealed by Imaging Mass Spectrometry;** Jörg Hanrieder¹; Anna Karlsson¹; Maria Fälth²; Sofie Eriksson-Mammo¹; Jonas Bergquist¹; Malin Andersson¹; ¹Uppsala University, Uppsala, Sweden; ²German Cancer Research Center, Heidelberg, Germany
- MOD pm 3:50 **Mass Spectrometry Visualizes Hypoxia-driven Processes in Breast Tumors;** Kamila Chughtai¹; Lu Jiang²; Tiffany R. Blackwell²; Kristine Glunde²; Ron M.A. Heeren¹; ¹AMOLF, Amsterdam, Netherlands; ²The Johns Hopkins University School of Medicine, Baltimore, MD
- MOD pm 4:10 **Imaging Mass Spectrometry to Uncover Proteomic Differences in Follicular Lymphomas;** Kristina Schwamborn^{1,2}; Ellen Leich³; Andreas Rosenwald³; Richard M. Caprioli¹; ¹Vanderbilt Univ Sch of Med, Nashville, TN; ²Technical University Munich, Munich, Germany; ³University of Wuerzburg, Wuerzburg, Germany

MONDAY AFTERNOON ORAL SESSIONS

PLANT PROTEOMICS

2:30 – 4:30 pm

Paul A. Haynes, Macquarie University, *presiding*
Korbel Ballroom 3-4

- MOE pm 2:30 **A Systems Approach for Characterizing the Phosphoproteome and Interactome of Leucine-Rich Repeat Receptor-Like Kinases in Arabidopsis**; Srijeet Mitra; Xiaofeng Wang; Kevin Blackburn; Tara Nash; Ruiqiang Chen; Steven Clouse; Michael Goshe; *North Carolina State University, Raleigh, NC*
- MOE pm 2:50 **Proteogenomics: Annotating the Genome of Zea Mays Using Proteomics**; Natalie E Castellana¹; Doruk Beyter²; Michelle Facette¹; Joshua Osborn¹; Zhouxin Shen¹; Justin Walley¹; Laurie Smith¹; Steven P. Briggs¹; Vineet Bafna¹; ¹UCSD, La Jolla, CA; ²Bilkent University, Ankara, Turkey
- MOE pm 3:10 **Structural Organization and Function of the Oligomeric Clp Protease in Plants Determined by QConCAT and Spectral Counting-based Quantitative Proteomics**; Klaas J. Van Wijk; Paul Dominic B. Olinares; Jitae Kim; Anton Poliakov; Lalit Ponnala; Giulia Friso; *Cornell University, Ithaca, NY*
- MOE pm 3:30 **Enhanced Shotgun Proteomic Approach Provides a Systematic Survey of Single Amino Acid Polymorphisms in Populus Leaf, Root, and Stem**; Paul Abraham^{1,2}; Rachel Adams^{1,2}; Ranjan Priya¹; Richard Giannone¹; Gerald Tuskan¹; Robert Hettich¹; ¹Oak Ridge National Lab, Knoxville, TN; ²GST, University of Tennessee, Knoxville, TN
- MOE pm 3:50 **Proteomic Responses in Arabidopsis thaliana Seedlings Treated with Ethylene**; Bret Cooper¹; Ruiqiang Chen²; Brad Binder³; Wesley Garrett¹; Mark Tucker¹; Caren Chang²; ¹USDA-ARS, Beltsville, MD; ²University of Maryland, College Park, MD; ³University of Tennessee, Knoxville, TN
- MOE pm 4:10 **Online enrichment and Targeted Analysis of Phosphopeptides in Hormone Mediated Plant Signaling**; Kelli Kline¹; J. Bryce Young²; Sahana Mollah²; Nicole Hebert³; Michael R. Sussman¹; ¹University of Wisconsin, Madison, WI; ²AB SCIEX, Concord, ON; ³Eksigent Technologies, Dublin, CA

HIGH RESOLUTION MS IN DRUG METABOLISM AND PHARMACOKINETICS

2:30 – 4:30 pm

Mustafa Varoglu, Cubist Pharmaceuticals, *presiding*
Four Seasons Ballroom 1-2

- MOF pm 2:30 **Accurate Mass: Why it's the Best Solution for Metabolite Identification In Discovery, Development and Clinical Applications**; Philip Tiller; *RMI laboratories, North Wales, PA*
- MOF pm 2:50 **When the Use of High Resolution Mass Spectrometry is Critical for Correct Structural Elucidation of Metabolites: A Few Case Studies**; Natalia Penner; Lin Xu; Chandra Prakash; *Biogen Idec, Cambridge, MA*
- MOF pm 3:10 **Metabolite Identification in Beagle Dog Bile Collected with the Entero-Test® Device**; Peter L. Jacobs; Rianne H.M. Gloudemans-Rijkers; Henk J.M. van Hal; Marlou L.P.S. van Iersel; Eric van der Meulen; *MSD, Oss, Netherlands*
- MOF pm 3:30 **Advantages of Single Injection Generic Quant & Qual Workflows using High Resolution Accurate Mass Technology for in-vivo PK analysis**; Suma Ramagiri¹; Tanya Gamble¹; Jeffrey Miller¹; Graham Gibson³; Hesham Ghobarah¹; Gary Impey¹; Elliott Jones¹; Yanou Yang²; Nirmala Raghavan²; Chiuwa Emily Luk²; Jonathan L. Josephs²; Ragu Ramanathan²; William Griffith Humphreys²; ¹AB SCIEX, Concord, CANADA; ²Bristol-Myers Squibb, Princeton, NJ; ³ABSCIEX, Medford, NJ
- MOF pm 3:50 **Comprehensive Metabolite Profiling in a Discovery Environment Using a Novel Hybrid Quadrupole-Orbitrap Instrument**; Jonathan L. Josephs¹; Yanou Yang¹; Chiuwa Emily Luk¹; Kate Comstock²; Tim Stratton²; Yingying Huang²; William Humphreys¹; ¹Bristol-Myers Squibb, Pennington, NJ; ²Thermo Fisher Scientific, San Jose, CA
- MOF pm 4:10 **Rapid Identification of Peptide Hydrolysis Fragments Using Quadrupole Time-of-Flight Mass Spectrometry to Facilitate Optimization of Pharmacokinetic Properties**; Hongjuan Zhao; Michelle Dennehy; Panos Hatsis; *Novartis, Cambridge, MA*

**BIOMARKER QUANTIFICATION:
CHALLENGES IN REGULATED BIOANALYSIS**

2:30 – 4:30 pm

Fabio Garofolo, Algorithmic Pharma, Inc., *presiding*
Four Seasons Ballroom 3-4

- MOG pm 2:30 **A Model Standard Operating Procedure for Quantitative LC-MS Biomarker Assay Validation**; Gary A. Schultz; Barry R. Jones; Kathleen A. Cormack; Stephen Lowes; *Advion BioServices, Inc., Ithaca, NY*
- MOG pm 2:50 **Quantitation of Aldosterone and Related Steroids by UPLC/MS for In-Vivo Samples**; Ling Xu; Lucinda Cohen; Xinchun Tong; *DMPK Merck Research Laboratories, Rahway, NJ*
- MOG pm 3:10 **Epitope Mapping and Quantitation of Troponin Biomarker by Targeted Mass Spectrometry**; Cheng Zhao; Helen Xie; Jeffrey Fishpaugh; Carol Ramsay; *Abbott Laboratories, Abbott Park, IL*
- MOG pm 3:30 **S100 A8, A9 and A12-Multiplex for Monitoring Inflammatory Status – Key Contributions for RA and Related Diseases**; Stephane Charmont¹; Stephan Bek¹; Nelson Guerreiro¹; Thomas Vogl²; Johannes Roth²; Imelda Schuhmann¹; ¹*Novartis Pharma AG, Basel, Switzerland*; ²*University Münster, Münster, Germany*
- MOG pm 3:50 **Development and Validation of an Online Spe-LC-MS/MS Assay for Quantitation of Urinary Tetranor PGDM and Tetranor PGEM As Inflammatory Biomarkers**; Yizhong Zhang; Guodong Zhang; Philip Clarke; Rick Steenwyk; Joe Zhaosheng Lin; *Pfizer, Groton, CT*
- MOG pm 4:10 **Quantitative Analysis of Growth Hormone Biomarker IGF-1 in Human Serum by UPLC-MS/MS: Extraction, Oxidation Stability, and Mass Spectrometry**; Moucun Yuan; Junlong Shao; Michael Tingler; Shanhua Lin; Bruce Hidy; Rand Jenkins; *PPD, Richmond, VA*

AWARD LECTURE

4:45 - 5:30 pm

Scott A. McLuckey, Purdue University, *presiding*
Wells Fargo Theatre



**AWARD FOR A DISTINGUISHED
CONTRIBUTION IN MASS SPECTROMETRY**

Robert J. Cotter
Johns Hopkins University

QUANTITATIVE PROTEOMICS: PEPTIDES

8:30 – 10:30 am

Claudia Maier, Oregon State University, *presiding*
Wells Fargo Theatre

- TOA am 8:30 **Next Generation Quantification (NGQ): Studying the Mitotic Microtubule Interactome Using a Novel Metabolic 5-Plex Quantification Method**; Marc Kirchner; Dominic Winter; Ghazal Ashrafi; Thomas Schwarz; Judith Steen; Hanno Steen; *Harvard Medical School/Children's Hospital Boston, Boston, MA*
- TOA am 8:50 **Comparison of iTRAQ- and mTRAQ-based Peptide Quantification in Global Proteomics and Phosphoproteomics Studies of EGF-Induced Signaling**; Philipp Mertins; Namrata Udeshi; Karl R. Clauser; Steven A. Carr; *The Broad Institute, Cambridge, MA*
- TOA am 9:10 **Label-Free Internal Reference Peptide Quantification of Phosphorylation Stoichiometry Using MS² and MS³ Analysis on an LTQ Velos Mass Spectrometer**; Amy-Joan L. Ham; Stacy D. Sherrod; Matthew V. Myers; Ming Li; Daniel C. Liebler; *Vanderbilt University School of Medicine, Nashville, TN*
- TOA am 9:30 **Investigating the Relationship between Sample Complexity and Accurate Assessment of Quantitative Change - How Uniquely Can an Ion be Measured**; Craig Dorschel; Martha Stapels; Scott Geromanos; *Waters Corporation, Milford, MA*
- TOA am 9:50 **SWATH-MS: Data Independent Capture of MS/MS Sequences for Quantification of Peptide Kinetics in a Cell Signalling Cascade**; Lorne E B Taylor¹; Stephen A Tate³; Yong Zheng¹; Cunjie Zhang¹; Ruedi Aebersold²; Tony Pawson¹; ¹*Samuel Lunenfeld Research Institute, Toronto, ON*; ²*ETH Zurich, Zurich, Switzerland*; ³*AB SCIEX, Concord, ON*
- TOA am 10:10 **Meeting the Design, Development and Implementation Challenges of >100-Plex Quantitative Assays for Proteins in Plasma: A Large-Scale, NCI-CPTAC Interlaboratory Study**; Susan E. Abbatiello¹; Birgit Schilling²; Brendan Maclean³; Pawel Sadowski⁴; Angela M. Jackson⁵; Mousumi Ghosh⁶; Hasmik Keshishian¹; Terri Addona¹; Jeffrey Whiteaker⁷; Simon Allen⁸; Michael Burgess¹; Nell Sedransk⁹; D. R. Mani¹; Steven C. Hall¹⁰; Steven A. Carr¹; CPTAC Network¹¹; Lisa Zimmerman¹²; Daniela Tomazela³; ¹*Broad Inst of MIT and Harvard, Cambridge, MA*; ²*Buck Inst for Research on Aging, Novato, CA*; ³*Univ of Washington, Seattle, WA*; ⁴*New York Univ*; ⁵*UVic Genome BC Proteomics Centre, Victoria, BC*; ⁶*Memorial Sloan Kettering Cancer, NY*; ⁷*Fred Hutchinson Cancer Res Ctr, Seattle, WA*; ⁸*Univ of California, San Francisco*; ⁹*NISS, Research Triangle Park, NC*; ¹⁰*UCSF Sandler-Moore Mass Spectrometry Core Facility, San Francisco*; ¹¹*Natl Cancer Inst, Bethesda, MD*; ¹²*Vanderbilt Univ.*

**UNKNOWN ENVIRONMENTAL CONTAMINANTS: ADVANCED
MASS SPECTROMETRY TECHNOLOGIES**

8:30 – 10:30 am

Imma Ferrer, University of Colorado, *presiding*
Room 501

- TOB am 8:30 **Formation of Highly Toxic Iodo-DBPs in Drinking Water**; Susan Richardson¹; Stephen Duirk^{1,2}; Cristal Lindell¹; Christopher Cornelison¹; Thomas Ternes³; Jennifer Kormos³; Michael Plewa⁴; Emmamarie Smith⁵; William Mitch⁵; ¹US EPA, NERL, Athens, GA; ²Univ of Akron, Akron, OH; ³Federal Inst of Hydrology, Koblenz, Germany; ⁴Univ of Illinois, Urbana, IL; ⁵Yale Univ, New Haven, CT
- TOB am 8:50 **Ultra-trace Level Metabolite Identification Using the Latest Generation of QqTOF, Benchtop Quadrupole-Orbitrap, and LIT-FTMS Instrumentation**; Jeffrey Gilbert¹; Jesse Balcer¹; Yelena A. Adelfinskaya¹; Kate Comstock²; Suresh Annangudi¹; Ayanna Jackson¹; Michael Hastings¹; Brian Wendelburg¹; David Mccaskill¹; Yingying Huang²; ¹Dow AgroSciences, Indianapolis, IN; ²Thermo Fisher Scientific, San Jose, CA
- TOB am 9:10 **Determination of Human-Use Pharmaceuticals in Ground- and Surface-Water Samples by Large-Volume Injection, High-Performance Liquid Chromatography/Tandem Mass Spectrometry**; Edward T. Furlong¹; Mary Noriega¹; Mark Burkhardt²; Laura Coffey¹; Stephen L. Werner¹; ¹National Water Quality Laboratory, U.S.G.S., Denver, CO; ²U.S.Environmental Protection Agency, Denver, CO
- TOB am 9:30 **Oxidative Removal of Selected PPCPs and Identification of Oxidative Degradates of PPCPS in Drinking Water Using LC-MS/MS**; Yinfa Ma¹; Chuan Wang¹; Qihua Wu¹; Honglan Shi²; Craig Adams³; Terry Timmons⁴; ¹Missouri S&T, Rolla, MO; ²Missouri S&T/ERC, Rolla, MO; ³University of Kansas, Lawrence, KS; ⁴Missouri Department of Natural Resources, Jefferson City, MO
- TOB am 9:50 **Microcystin Characterization by Negative Mode Electrospray Ionization Tandem Mass Spectrometry**; Felipe Augusto Dörr¹; Diogo Oliveira-Silva²; Norberto P. Lopes³; Jacobo Iglesias⁴; Dietrich A. Volmer⁴; Ernani Pinto¹; ¹Universidade de São Paulo (FCF-USP), São Paulo, Brazil; ²Univ Federal de São Paulo (UNIFESP), Brazil; ³Universidade de São Paulo (FCFRP-USP), Ribeirão Preto, Brazil; ⁴Saarland Univ, Saarbrücken, Germany
- TOB am 10:10 **Discovery of Oxidation Products in Ozonated Carbamazepine Solution by Liquid Chromatography Coupled to Hybrid Triple Quadrupole Linear Ion-Trap Mass Spectrometry**; Feng Qin¹; Jin Jiang²; Jun Ma²; Yongming Xie¹; ¹AB SCIEX, Shanghai, CHINA; ²Harbin Institute of Technology, Harbin, China

METABOLOMICS

8:30 – 10:30 am

William Wikoff, University of California-Davis, *presiding*
Room 401

- TOC am 8:30 **Automatically Annotating Spectra with Fragmentation Reactions - an Aid for Manual and Automatic Identification of Unknowns**; Florian Rasche; Franziska Hufsky; Kerstin Scheubert; Sebastian Böcker; *Friedrich-Schiller-University Jena, Jena, Germany*
- TOC am 8:50 **Chemical Annotation of MassBank ESI-MS² Data**; Takaaki Nishioka^{1,2}; Masanori Arita^{1,3}; Yuya Ojima^{1,2}; Tasuku Ikeda^{1,2}; Yoshito Nihei^{1,2}; ¹BIRD, JST, Tokyo, Japan; ²IAB, Keio University, Tsuruoka, Japan; ³Grad, Sch. Sci., The University of Tokyo, Tokyo, Japan
- TOC am 9:10 **Plasma Metabolite Identification using High Resolution LC-MS and HCD Fragmentation**; Bruce Kristal¹; Susan S. Bird¹; Matthew Sniatynski¹; Diane Sheldon¹; Vasant Marur¹; Wayne Matson²; ¹Brigham and Women's Hospital, Boston, MA; ²Bedford VA Hospital, Bedford, MA
- TOC am 9:30 **Exploiting Metabolic Diversity for the Discovery and Elucidation of Triterpene Saponin Biosynthesis**; Lloyd W. Sumner; John H. Snyder; David V. Huhman; Dong Sik Yang; Stacy Allen; Yuhong Tang; *The Samuel Roberts Noble Foundation, Ardmore, OK*
- TOC am 9:50 **Development of a High-Throughput Mass Spectrometry Method to Identify Malignancy in Patients with Adrenal Tumors**; Angela E Taylor¹; Micheal Bieh²; Beverly A Hughes¹; Petra Schneider¹; David J Smith¹; Han Stiekema²; Peter Nightingale³; Cedric HL Shackleton¹; Paul M Stewart¹; Wiebke Arlt¹; ¹University of Birmingham, Birmingham, UK; ²University of Groningen, Groningen, The Netherlands; ³University Hospital Birmingham, Birmingham, UK
- TOC am 10:10 **HuPMet: Metabolomic Study of "Normal" Human Plasma Defines the Normal Distribution of the Human Metabolome in Plasma**; Maureen Kachman¹; Alexander Raskind¹; Steven M. Fischer²; Adrienne Tymiak³; Michael Reily³; Jeremy Myers⁴; Yoshinori Satomi⁵; Yoji Ueda⁵; Hidenori Kamiguchi⁵; Takushi Ooga⁶; Tomoyoshi Soga⁷; Chris Beecher¹; ¹University of Michigan, Ann Arbor, MI; ²Agilent Technologies, Santa Clara, CA; ³Bristol-Myers Squibb, Princeton, NJ; ⁴Pfizer Oncology Research Unit, Pearl River, NY; ⁵Takeda, Osaka, Japan; ⁶Human Metabolome Technologies, Tokyo, Japan; ⁷Keio University, Tsuruoka, Japan

BIOMOLECULAR STRUCTURE ANALYSIS BY COVALENT LABELING: FUTURE DIRECTIONS

8:30 – 10:30 am

Bradford W. Gibson, Buck Institute for Age Research,
presiding
Korbel Ballroom 1-2

- TOD am 8:30 **Proteinase K Non-Specific Digestion for the Comprehensive Identification of Interpeptide Crosslinks: Application to Prion Proteins;** Evgeniy V. Petrotchenko¹; Jason J. Serpa¹; David S. Wishart²; Christoph H. Borchers¹; ¹UVic - Genome BC Protein Centre, Victoria, Canada; ²Departments of Biological Sciences and Computing., Edmonton, Canada
- TOD am 8:50 **Folding Mechanism of a Membrane Protein Probed by Pulsed Oxidative Labeling and Mass Spectrometry;** Yan Pan¹; Leonid Brown²; Lars Konermann¹; ¹University of Western Ontario, London, Canada; ²University of Guelph, Guelph, Canada
- TOD am 9:10 **An Integrated High-throughput Workflow for Identification of Crosslinked Peptides from Complex Sample;** Bing Yang¹; Yan-Jie Wu²; Ming Zhu¹; Jin-Zhong Lin¹; Kun Zhang²; Shu-Kun Luo¹; Li-Yun Xiu²; She Chen¹; Ke-Qiong Ye¹; Si-Min He²; Meng-Qiu Dong¹; Yue-He Ding¹; ¹National Institute of Biological Science, Beijing, Beijing, CHINA; ²Key Lab of Intelligent Information Processing, CAS, Beijing, China
- TOD am 9:30 **Novel structural model for CCL5 (RANTES) Oligomerization Using Hydroxyl Radical Footprinting;** Caroline Watson¹; Xu Wang¹; Joshua S. Sharp²; James H. Prestegard¹; ¹Complex Carbohydrate Research Center/UGA, Athens, GA; ²University of Georgia, Athens, GA
- TOD am 9:50 **Mapping the Yeast 19S Proteasome Topology by Chemical Cross-linking and Multistage Tandem Mass Spectrometry;** Athit Kao¹; Wynne Kandur²; Ying Ying Yang¹; Vishal Patel³; Shenheng Guan⁴; Arlo Randall³; Pierre Baldi³; Scott Rychnovsky²; Lan Huang¹; ¹Dept. of Physio & Biophys., Univ. of Cali., Irvine, Irvine, CA; ²Dept. of Chem., Univ. of Cali., Irvine, Irvine, CA; ³Inst. Geno. & Bioinfo., Univ. of Cali., Irvine, Irvine, CA; ⁴Dept. Pharm. Chem., Univ. of Cali., San Fran., San Francisco, CA
- TOD am 10:10 **Millisecond Water Exchange Process in Proteins Probed by Time Resolved Radiolytic Labeling;** Rhijuta D'mello; Manish Dutt; Sayan Gupta; Mark Chance; Case Western Reserve University, Upton, NY

FUNDAMENTALS: SUPRAMOLECULAR CHEMISTRY/Non-covalent Interactions

8:30 – 10:30 am

Eric D. Dodds, University of Nebraska-Lincoln, presiding
Korbel Ballroom 3-4

- TOE am 8:30 **Influence of Excitation Sweep Direction on Detection of Non-covalent Complex Ions Using Fourier Transform Ion Cyclotron Resonance Mass Spectrometry;** Chad Jones; David V. Dearden; Brigham Young University, Provo, UT
- TOE am 8:50 **Characterization of POSS-sorbitol Non-Covalent Complexes, a New Class of Polymer Composite Materials;** Vincenzo Scionti; Sayantan Roy; Sadhan C. Jana; Chrys Wesdemiotis; The University of Akron, Akron, OH
- TOE am 9:10 **A Novel Approach to Study Intrinsic Dissociation Energies and Structures of Host-Guest Cyclodextrin Complexes in the Gas Phase;** Zhongshu Li; Xiangyang Zhang; Institute for Organic Chemistry, ETH Zurich, Zurich, Switzerland
- TOE am 9:30 **Top-down Fragmentation of Protein Assemblies: Native Electrospray and Electron-Capture Dissociation in FTICR MS;** Hao Zhang; Weidong Cui; Jianzhong Wen; Robert E. Blankenship; Michael L. Gross; Washington University, Saint Louis, MO
- TOE am 9:50 **Optimized Buffer Conditions for Stabilizing Multiprotein Complex Structure in the Absence of Bulk Solvent: Development of a Gas-phase Hofmeister Series;** Linjie Han; Suk-Joon Hyung; Brandon Ruotolo; University of Michigan, Ann Arbor, MI
- TOE am 10:10 **Evaluation of Activation Methods for Gas-Phase Footprinting of Nucleic Acid Non-Covalent Complexes;** John B. Mangrum¹; Maria Basanta Sanchez¹; Joshua Wilhide²; Daniele Fabris¹; ¹The RNA Institute, University at Albany, Albany, NY; ²U. Maryland Baltimore County, Baltimore, MD

**MASS SPECTROMETRY ANALYSIS OF
DRIED BLOOD SPOT SAMPLES**

8:30 – 10:30 am

Qin Ji, Bristol-Myers Squibb, *presiding*
Four Seasons Ballroom 1-2

- TOF am 8:30 **Highly Sensitive and Specific Clinical Diagnostics of Lysosomal Storage Diseases in Dry Blood Spots by Multiple Reaction Monitoring Mass Spectrometry**; Claudia Cozma¹; Christina Mosoarca²; Sebastian Dilly¹; Marius-Ionut Iurascu¹; Thomas Fritz³; Stefan Maeser⁴; Alina Zamfir²; Michael Przybylski¹; ¹Universitat Konstanz, Konstanz, Germany; ²National Institute for Research and Development, Timisoara, Romania; ³Genzyme CEE GmbH, Konstanz, Germany; ⁴Genzyme GmbH, Neu-Isenburg, Germany
- TOF am 8:50 **Feasibility of Dried Blood and Plasma Spots to the Enhanced Stability of Glucuronide Metabolites**; Chester L. Bowen¹; Jessica Cades²; Christopher A. Evans¹; ¹GlaxoSmithKline, King Of Prussia, PA; ²Drexel University, Philadelphia, PA
- TOF am 9:10 **A Strategy to Overcome Challenges with Dried Blood Spot Sample Dilution**; Guowen Liu; Heidi Snapp; Qin Ji; Bristol-Myers Squibb Co., Princeton, NJ
- TOF am 9:30 **Perforated Dried Blood Spot (PDBS): A Novel Concept for Accurate Micro-sampling**; Fumin Li¹; John Zulkoski¹; Douglas Fast²; Steven Michael³; ¹Covance Inc., Madison, WI; ²Covance Laboratories, Madison, WI; ³Covance Laboratories, Inc., Madison, WI
- TOF am 9:50 **Paper Spray Mass Spectrometry as an Ambient, Quantitative method for Point of Care Therapeutic Drug Monitoring from Blood**; Ryan Espy; Nicholas Manicke; Zheng Ouyang; R. Graham Cooks; Purdue University, West Lafayette, IN
- TOF am 10:10 **Developing a Fully Automated Dried Blood Spot Direct Analysis Technique for High Sample Throughput Quantitative Bioanalysis**; Paul Abu-Rabie; Neil Spooner; Philip Denniff; GlaxoSmithKline R&D Ltd, Ware, UK

**CLINICAL CHEMISTRY: ADVANCES IN
SEPARATION TECHNOLOGIES**

8:30 – 10:30 am

Russell Grant, Labcorp, *presiding*
Four Seasons Ballroom 3-4

- TOG am 8:30 **Automated Protein Sample Preparation – Rapid Identification of Single Amino Acid Polymorphisms Amongst a Class of Compounds**; Fred Regnier; Purdue University, West Lafayette, IN
- TOG am 8:50 **Vapor-Sorption Induced (Matrix) Crystallization and Protein Arrays for High-Throughput Label-Free Quantitation of Autoantibodies and Enzyme Activities**; Michael Roth; Jaekuk Kim; Steven Patrie; UT Southwestern Medical Center, Dallas, Tx
- TOG am 9:10 **Profiling of Gangliosides in Brain Tissue and Cell Membranes using nanoHPLC Chip/Q-TOF MS**; Hyeyoung Lee¹; Rudolf Grimm²; Carlito Lebrilla¹; Bruce German¹; ¹University of California, Davis, CA; ²Agilent Technologies, Santa Clara, CA
- TOG am 9:30 **A Novel Multidimensional HILIC Based Proteomic Approach Provides High Resolution Separation Increasing Sensitivity in Proteome Analysis**; Serena Di Palma¹; Paul Boersema^{1,2}; Marc van de Wetering³; Daniel Stange³; Hans Clevers³; Albert J.R. Heck¹; Shabaz Mohammed¹; ¹Utrecht University, Utrecht, Netherlands; ²Max Planck Institute for Biochemistry, Proteomics, Martinsried (Munich), Germany; ³Hubrecht Institute, University Medical Center, Utrecht, The Netherlands
- TOG am 9:50 **An Empirical Marriage of HILIC and Clinical Diagnostics: Exploration and Expansion of Development, Utility and Doctrine**; Brian Rappold; Russell Grant; Matthew Crawford; Patricia Holland; Labcorp, Burlington, NC
- TOG am 10:10 **Standardized High Throughput LC-MS/MS Steroid-Quantification for Clinical Metabolomics - Interlaboratory and Interassay Validation**; Therese Koal¹; Diane Schmiederer¹; Hai Pham Tuan¹; Cornelia Röhring¹; Manfred Rauh²; ¹Biocrates Life Sciences AG, Innsbruck, AUSTRIA; ²Universitätsklinikum Erlangen Kinder- und Jugendk, Erlangen, Germany

TUESDAY AFTERNOON ORAL SESSIONS

INFORMATICS: QUANTIFICATION/VALIDATION

2:30 – 4:30 pm

Brian C. Searle, Proteome Software, Inc., *presiding*
Wells Fargo Theatre

- TOA pm 2:30 **Systematic Biases Affecting Peptide Intensities in Label-Free Proteomic Analyses**; Paul Rudnick¹; Xia Wang²; Xinjian Yan¹; Nell Sedransk²; Stephen Stein¹; ¹NIST, Gaithersburg, MD; ²National Institute of Statistical Sciences, Research Triangle, NC
- TOA pm 2:50 **Non-parametric *p*-values for Differential LC-MS Proteomics Experiments**; Gregory Finney; Gennifer Merrihew; Michael J. Maccoss; *University of Washington, Seattle, WA*
- TOA pm 3:10 **Changing the Rules of the Game: Next Generation Quantification (NGQ) Enables Complete Isotopic Multiplexing for Quantitative Functional and Dynamic Proteomics**; Marc Kirchner; Dominic Winter; Judith Steen; Hanno Steen; *Harvard Medical School/Children's Hospital Boston, Boston, MA*
- TOA pm 3:30 **Selecting Peptides Based Upon their Response to Protein Concentration Improves Upon the HI-3 Method for Protein Quantification**; Sean McIlwain; Michael Bereman; Michael Mathews; Edwin Rubel; Michael J. Maccoss; William Noble; *University of Washington, Seattle, WA*
- TOA pm 3:50 **Bayesian Hierarchical Reconstruction of Protein Profiles Including a Digestion Model**; Pierre Grangeat¹; Pascal Szacherski^{1,2}; Laurent Gerfault¹; Jean-François Giovannelli²; ¹CEA-LETI, Minatec Campus, Grenoble, France; ²Université de Bordeaux 1 – CNRS – IPB, IMS, Talence, France
- TOA pm 4:10 **mProphet- automated SRM Data Processing and Statistical Error Estimation for Large Scale SRM Experiments**; Oliver Rinner¹; Lukas Reiter¹; Paola Picotti²; Ruth Huettenhain²; Ruedi Aebersold²; ¹Biognosys AG, Zurich, Switzerland; ²Institute for Molecular Systems Biology, Zuerich, Switzerland

ENVIRONMENTAL CHEMISTRY AND HEALTH

2:30 – 4:30 pm

Susan Richardson, US EPA, NERL, *presiding*
Room 501

- TOB pm 2:30 **Biodegradation Study of a Fluorotelomer Polymer Product**; Barbara S. Larsen¹; Robert Buck¹; William R Berti¹; Edward C. Schaefer²; Raymond L. Van Hoven Van Hoven²; ¹The DuPont Company, Wilmington, DE; ²Wildlife International, Ltd., Easton, MD
- TOB pm 2:50 **Drinking and Swimming with Haloquinones: Liquid Chromatography-Tandem Mass Spectrometry Investigation of Tap Water and Swimming Pools**; Yuli Zhao; Wei Wang; Jessica Boyd; Xing-Fang Li; *University of Alberta, Edmonton, Canada*
- TOB pm 3:10 **Pollution of Moscow Air in Winter. The GC-MS Study of Snow Samples**; Dr. Olga Polyakova; Dmitry Mazur; Albert T. Lebedev; *Moscow State University, Moscow, Russian Federation*
- TOB pm 3:30 **Compositional Analysis of BP Deepwater Horizon Oil Contaminated Pensacola Beach Sand by Ultrahigh-Resolution FT-ICR-MS**; Brian M. Ruddy¹; Amy M. McKenna²; David C. Podgorski¹; Ryan P. Rodgers²; Markus Huetzel¹; Alan G. Marshall^{1,2}; ¹Florida State University, Tallahassee, FL; ²Ion Cyclotron Resonance Prog, Tallahassee, FL
- TOB pm 3:50 **Determination of Bisphenol A Containing Compounds in Water Samples Taken from Different Countries at Different Stages of Economic Development**; M. Paul Chiarelli¹; Reichert Matthew¹; Deepika Panawennage¹; Amy Luke¹; Terrence Forrester²; Jacob Plange-Rhule³; ¹Loyola University, Chicago, IL; ²University of the West Indies, Mona, Jamaica; ³Kwame Nkrumah University, Kumasi, Ghana
- TOB pm 4:10 **In-Situ Detection of Agrochemicals from Fruit Using Lens Wipes and a Miniature Mass Spectrometer**; Santosh Soparawalla; Fatkhulla Tadjimukhamedov; Joshua Wiley; R. Graham Cooks; *Purdue University, West Lafayette, IN*

TUESDAY AFTERNOON ORAL SESSIONS

LIPIDS I: IDENTIFICATION AND STRUCTURAL ANALYSIS

2:30 – 4:30 pm

Joseph A. Hankin, University of Colorado, *presiding*
Room 401

- TOC pm 2:30 **Unexpected Bioactive Oxysterols in Brain and Cerebrospinal Fluid: Discoveries Using a Charge-Tagging Approach;** William James Griffiths¹; Michael Ogundare; Anna Meljon; Yuqin Wang; Swansea University, Swansea, UK
- TOC pm 2:50 **Tissue Imaging Mass Spectrometry of Sphingolipids;** Cameron Sullards¹; Yanfeng Chen¹; Ying Liu²; Alfred H. Merrill, Jr.¹; ¹Georgia Institute of Technology, Atlanta, GA; ²Emory University, Atlanta, GA
- TOC pm 3:10 **Towards the Complete Structure Elucidation of Complex Lipids by Mass Spectrometry: Novel Approaches to Ion Activation;** Stephen J Blanksby¹; Huong Pham Thu³; Tony Ly⁵; Berwyck Poad²; Adam Trevitt¹; J. Larry Campbell⁴; Todd W Mitchell¹; ¹University of Wollongong, Wollongong, Nsw, Australia; ²University of California, San Diego, CA; ³School of Chemistry, University of Wollongong, Wollongong, AUSTRALIA; ⁴AB SCIEX, Concord, ON; ⁵Wellcome Trust Centre for Gene Regulation and Expr, Dundee, UK
- TOC pm 3:30 **Chemistry Arts in Shotgun Lipidomics for Lipid Analysis and their Biological Applications;** Xianlin Han; Hua Cheng; Zhongdan Zhao; Xiaoling Fang; Huafeng Fang; Sanford-Burnham Medical Research Institute, Orlando, FL
- TOC pm 3:50 **Lipidomic Approaches to Host-Pathogen Interactions;** Markus Wenk; National University of Singapore, Singapore, Singapore
- TOC pm 4:10 **Stable Isotope-Assisted Identification of Polyunsaturated Lipid Metabolites Using HPLC/ESI-MS/MS;** Hee-Yong Kim; Karl Kevala; Masanori Katakura; National Institutes of Health, Bethesda, MD

PROTEIN-LIGAND INTERACTIONS: CHARACTERIZATION BY MASS SPECTROMETRY

2:30 – 4:30 pm

Patrick R. Griffin, The Scripps Research Institute, *presiding*
Korbel Ballroom 1-2

- TOD pm 2:30 **Protein Interactions and Topologies in Cells;** Chunxiang Zheng²; Li Yang¹; Chang Xue²; Chad Weisbrod²; Juan Chavez²; James Bruce²; ¹Washington State University, Seattle, WA; ²University of Washington, Seattle, WA
- TOD pm 2:50 **Monitoring Protein-Ligand Stabilization by Electrospray Ionization Ion Mobility Mass Spectrometry;** Sabrina Benchaar; Jiang Zhang; Joseph A. Loo; UCLA, Los Angeles, CA
- TOD pm 3:10 **Thermodynamic Analysis of Protein-Ligand Binding Interactions on the Proteomic Scale;** Patrick D. DeArmond; Erin C. Strickland; Michael C. Fitzgerald; Duke University, Durham, NC
- TOD pm 3:30 **Using Tandem Mass Spectrometry to Choose Appropriate Kinase Inhibitor Drugs in Cancers: A Personalized Medicine Approach Based on Protein-Protein Interactions (PPI);** Jeffrey Engelman²; John Asara¹; ¹Beth Israel Deaconess Medical Center, Boston, MA; ²Massachusetts General Hospital, Boston, MA
- TOD pm 3:50 **Unravelling the Real Time Assembly Kinetics of Ten Hsp90 Complexes Formed Simultaneously;** Nina Morgner; Ima Obong-Ebong; Carol Robinson; University of Oxford, Oxford, UK
- TOD pm 4:10 **Interaction of Ligands with Alzheimer's and Type 2 Diabetes Amyloid Forming Monomers Using IMS-MS: Screening Potential Drug Candidates;** Michael T. Bowers¹; Megan Gessel¹; Chun Wu¹; Joan-Emma Shea¹; Xuyen Zheng¹; Huiyuan Li²; Gal Bitan²; ¹UC Santa Barbara, Santa Barbara, CA; ²UC Los Angeles, Los Angeles, CA

TUESDAY AFTERNOON ORAL SESSIONS

ION TRAPS AND HYBRID INSTRUMENTS: NEW DEVELOPMENTS

2:30 – 4:30 pm

Ryan R. Julian, University of California-Riverside, *presiding*
Korbel Ballroom 3-4

IMAGING MS: PHARMACEUTICAL APPLICATIONS

2:30 – 4:30 pm

Donald McKenzie, Covance, *presiding*
Four Seasons Ballroom 1-2

- TOE pm 2:30 **An Ion Mobility-Linear Ion Trap Hybrid Mass Spectrometer For Analysis of Biological Molecules**; Sunyoung Lee; Steven M. Zucker; Nathaniel Webber; Stephen J. Valentine; David E. Clemmer; James P. Reilly; *Indiana University, Bloomington, IN*
- TOE pm 2:50 **Planar Quadrupole and Coaxial Ion Trap Mass Analyzers: Effects of Field Shape**; Daniel Austin; Zhiping Zhang; Brett Hansen; Ying Peng; *Brigham Young University, Provo, UT*
- TOE pm 3:10 **Gas-phase Ion/Ion Reactions Eliminate Interference in Isobaric Tag-Based Quantification**; Craig D. Wenger; M. Violet Lee; Alexander S. Hebert; Graeme C. McAlister; Aaron R. Ledvina; Douglas H. Phanstiel; Michael S. Westphall; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- TOE pm 3:30 **Dipolar and Monopolar DC Potentials Applied to a 3-D Ion Trap: Characterizing CID and the Ion Trap**; Boone Prentice; Scott A. Mcluckey; *Purdue University, Lafayette, IN*
- TOE pm 3:50 **Evaluation of High Energy Collision-induced Dissociation (HCD) on a Bench Top Linear Ion Trap Mass Spectrometer for Shotgun Proteomics**; Michael S. Bereman¹; Jesse D. Canterbury¹; Jarrett D. Egertson¹; Julie Horner²; Vlad Zabrouskov²; Michael J. MacCoss¹; ¹*Univ of Washington, Seattle, WA*; ²*Thermo Fisher Scientific, San Jose, CA*
- TOE pm 4:10 **Ion Sponge: A 3-Dimensional Quadrupole Ion Trap Array for Ion Trapping, Sorting and Gas-Phase Ion Reactions**; Wei Xu; Zhiping Zhang; Zheng Ouyang; *purdue university, West Lafayette, IN*

- TOF pm 2:30 **Integration of Imaging Mass Spectrometry into Drug Development and the Importance of Distribution and Quantitation**; David S. Wagner; M. Reid Groseclose; Lauren Richards-Peterson; Peter Gorycki; Steve Castellino; *GlaxoSmithKline, RTP, NC*
- TOF pm 2:50 **Could Mass Spectrometry Imaging Be a Drug Quantification Technique?**; Gregory Hamm¹; David Bonnel¹; Raphael Legouffe¹; Fabien Pamelard¹; Jean-Marie Delbos²; Francois Bouzom²; Isabelle Fournier³; Michel Salzet³; Jonathan Stauber¹; ¹*ImaBiotech, Villeneuve D'ascq, France*; ²*Technologie Servier, Orléans, France*; ³*MALDI Imaging Team Université Lille Nord de France, Lille, France*
- TOF pm 3:10 **Absolute Quantification of Drugs In Tissue Sections Using MALDI IMS**; Anna Nilsson¹; Mohammadreza Shariatgorji¹; Thomas Fehniger²; Lena Gustavsson³; Gyorgy Marko-Varga²; Per E. Andren¹; ¹*Uppsala University, Uppsala, Sweden*; ²*Lund University, Lund, Sweden*; ³*AstraZeneca, Lund, Sweden*
- TOF pm 3:30 **Towards Implementation of MALDI IMS into the Drug Development Workflow: Bridging Histology and Drug Tissue Distributions**; Reid Groseclose; David S. Wagner; Steve Castellino; *GlaxoSmithKline, RTP, NC*
- TOF pm 3:50 **Mass Spectrometry Imaging (MALDI and TOF-SIMS) and Immunohistological Studies of Benzalkonium Chloride Toxicity in Rabbit Eyes** Nicolas Desbenoit^{1,2}; Christophe Baudouin³; Jean-Pierre Both⁴; Alain Brunelle²; Isabelle Fournier⁵; Vincent Guérineau²; Olivier Laprévote^{2,6}; Raphaël Legouffe⁷; Michel Salzet⁵; Jonathan Stauber⁷; Maxence Wisztorski⁵; Françoise Brignole-Baudouin^{1,3}; ¹*Institut de la Vision, INSERM, UMR S968, Paris, France*; ²*Centre de recherche de Gif, ICSN-CNRS, Gif-Sur-Yvette, France*; ³*CHNO des Quinze-Vingts, Paris, France*; ⁴*CEA-LIST, Gif-Sur-Yvette, France*; ⁵*LSMBFA, Université de Lille 1, Villeneuve d'Ascq, France*; ⁶*CTAC, EA 446, Université Paris Descartes, Paris, France*; ⁷*ImaBiotech Campus Cité Scientifique, Villeneuve d'Ascq, France*
- TOF pm 4:10 **Liquid Extraction Surface Analysis Mass Spectrometry (LESA-MS) as a Novel Tool for Drug Distribution and Metabolism Analysis: The Terfenadine Example**; Daniel Eikel¹; Marissa Vavrek²; Yunsheng Hsieh³; Fangbiao Li³; Walter Korfmacher³; Jack D. Henion¹; ¹*Advion BioSystems Inc., Ithaca, NY*; ²*Merck and Company Inc., West Point, PA*; ³*Merck Research Laboratories, Kenilworth, NJ*

TUESDAY AFTERNOON and WEDNESDAY MORNING ORAL SESSIONS

ADVANCES IN MICRO- AND NANO-SCALE SEPARATIONS

2:30 – 4:30 pm

J. Will Thompson, Duke University, *presiding*
Four Seasons Ballroom 3-4

- TOG pm 2:30 **The Effects of Column and Gradient Lengths on Peak Capacity, Peptide Identifications, and Suppression in Shotgun Proteomics using nanoLC-MS;** Edward J. Hsieh¹; Michael S. Bereman¹; Stanley Durand²; Gary A. Valaskovic²; Michael J. Maccoss¹; ¹University of Washington, Seattle, WA; ²New Objective, Inc., Woburn, MA
- TOG pm 2:50 **Application of Heated Nanospray Techniques for Improved Resolution in the Analysis of Steroids;** Ken Lewis¹; Thurman Allsup¹; Gary Valaskovic²; ¹OpAns, LLC, Durham, NC; ²New Objective, Inc., Woburn, MA
- TOG pm 3:10 **UHPLC Metal Chips For High Pressure Microfluidic LC-MS;** Reid Brennen¹; Karen Seaward¹; Jon James²; Hongfeng Yin¹; Lynette Martinez¹; Elizabeth Carr¹; Susan Post¹; Qing Bai¹; John Mannion¹; Kevin Killeen¹; ¹Agilent Laboratories, Santa Clara, CA; ²Agilent Technologies, Santa Rosa, CA
- TOG pm 3:30 **Capillary Ion Chromatography Mass Spectrometry: Instrumentation and Application to Drug Discovery;** Jinyuan Wang; William C. Schnute; *Dionex Corporation, Sunnyvale, CA*
- TOG pm 3:50 **Microfluidic Capillary Electrophoresis - Mass Spectrometry Using Data-Independent Multiplexed Fragmentation for High-Throughput Proteomics;** Andrew Chambers; J. Scott Mellors; J. Michael Ramsey; *University of North Carolina, Chapel Hill, NC*
- TOG pm 4:10 **Sheathless CE-TOF-MS: a New Horizon for in-Depth Metabolic Profiling of Urine;** Rawi Ramautar¹; Jean-Marc Busnel^{1,2}; André M. Deelder¹; Oleg A. Mayboroda¹; ¹Biomolecular Mass Spectrometry Unit, LUMC, Leiden, Netherlands; ²Beckman Coulter, Brea, CA

AWARD LECTURE

4:45 - 5:30 pm

Scott A. McLuckey, Purdue University, *presiding*
Wells Fargo Theatre



BIEMANN MEDAL

Béla Paizs

German Cancer Research Center

INTACT PROTEINS: QUANTITATIVE AND QUALITATIVE ANALYSIS

8:30 – 10:30 am

Michael Washburn, Stowers Institute for Medical Research, *presiding*
Wells Fargo Theatre

- WOA am 8:30 **Electrospray-ionization Mass Spectrometry of Nanogram Samples of Intact Integral Membrane Proteins toward Full Proteome Coverage Top-down Analyses** Puneet Souda; Christopher M. Ryan; Li Jing; Libo Zhao; Clifton Shen; James Bowie; Kym Faull; Julian Whitelegge; *University of California LA, Los Angeles, CA*
- WOA am 8:50 **Comparison of CID, ETD, and HCD for Top-Down Characterization of Histones;** Zhixin Tian; Nikola Tolić; Rui Zhao; Shawna M. Hengel; Si Wu; Ronald J. Moore; Errol W. Robinson; Richard D. Smith; Ljiljana Paša-Tolić; *Pacific Northwest National Laboratory, Richland, WA*
- WOA am 9:10 **Interaction Analysis of Ribosomal Particles Using the Mass Spectrometry Cleavable Crosslinker DC4;** Billy Clifford-Nunn; Janine Maddock; Philip Andrews; *University of Michigan, Ann Arbor, MI*
- WOA am 9:30 **Quantitative Determination of Protein-Protein Interactions within Noncovalent Complexes by ESI-Mass Spectrometry;** Elisabetta Boeri Erba; Konstantin Barylyuk; Yang Yang; Renato Zenobi; *ETH Zurich, Zurich, Switzerland*
- WOA am 9:50 **Gas-Phase Ions of Human Hemoglobin A, F and S: Cross Sections, H/D Exchange and MS/MS;** Yang Kang; Donald J. Douglas; *University of British Columbia, Vancouver, Canada*
- WOA am 10:10 **Global Proteome Analysis Using High Throughput Top Down Proteomics;** John C. Tran¹; Leonid Zamdborg²; Ji Eun Lee³; Adam D. Catherman¹; Kenneth R. Durbin¹; Mingxi Li²; Dorothy R. Ahlf²; Jeremiah D. Tipton¹; Neil L. Kelleher¹; ¹Northwestern University, Evanston, IL; ²University of Illinois at Urbana-Champaign, Urbana, IL; ³Korea Institute of Science and Technology, Seoul, Korea

ION MOBILITY SEPARATIONS: FUNDAMENTALS AND INSTRUMENTATION

8:30 – 10:30 am

Brandon Ruotolo, University of Michigan, *presiding*
Room 501

- WOB am 8:30 **Interfacing Ion Mobility Spectrometry with Orbitrap: Novel Hyphenated Approach for Biochemical Analysis;** Mikhail Belov¹; Yehia Ibrahim¹; William Danielson¹; Alexander Makarov²; ¹*Pacific Northwest Nat Lab, Richland, WA*; ²*Thermo Fisher Scientific (Bremen) GmbH, Bremen, GERMANY*
- WOB am 8:50 **A QconCAT Standard for Calibration of Ion Mobility Mass Spectrometry;** Ross Chawner¹; Bryan McCullough²; Kevin Giles³; Simon J. Gaskell⁴; Claire Evers¹; ¹*University of Manchester, Manchester, UK*; ²*LGC Ltd, Teddington, UK*; ³*Waters Corporation, Manchester, UK*; ⁴*Queen Mary University of London, London, UK*
- WOB am 9:10 **Probing the Limits of Resolution and Accuracy on a Second Generation Travelling Wave Ion Mobility Separator;** Yueyang Zhong; Suk-Joon Hyung; Brandon Ruotolo; *University of Michigan, Ann Arbor, MI*
- WOB am 9:30 **Selection of Transport Gas Modifiers in Differential Mobility Spectrometry - Mass Spectrometry (DMS-MS);** Stephen L Coy^{1,2}; Adam B Hall^{1,3}; Bryan M. Wong⁴; Bradley B. Schneider⁵; Thomas R Covey⁵; Albert J Fornace Jr.²; Paul Vourros¹; ¹*Northeastern University, Boston, MA*; ²*Georgetown U Medical Center, Washington, DC*; ³*Boston U, Boston, MA*; ⁴*Sandia National Lab, Livermore, CA*; ⁵*AB SCIEX, Concord, ON*
- WOB am 9:50 **Projected Superposition Approximation: A Fast and Accurate Algorithm for Computing Molecular Collision Cross Sections for Macromolecules** Christian Bleiholder; Thomas Wytenbach; Michael T. Bowers; *University of California Santa Barbara, Santa Barbara, CA*
- WOB am 10:10 **On the Origin of Peaks in Overtone Mobility Spectrometry (OMS) Distributions: Applications to High-Resolution Mobility Separations;** Stephen Valentine¹; Ruwan Kurulugama²; David E. Clemmer¹; ¹*Indiana University, Bloomington, IN*; ²*PNNL, Richland, WA*

LIPIDS II: PROFILING AND QUANTITATION

8:30 – 10:30 am

Hee-Yong Kim, National Institutes of Health, *presiding*
Room 401

- WOC am 8:30 **Recent Advances in Lipid Mass Spectrometry;** Robert C. Murphy; *Univ of Colorado Denver, Aurora, CO*
- WOC am 8:50 **Identifying Novel Components of a Pheromone Synthesis Pathway Using Direct UV-Laser Desorption Ionization Mass Spectrometry of Cuticular Lipids;** Joanne Y. Yew^{1,2}; Klaus Dreisewerd³; ¹*Temasek Life Sciences Laboratory, Singapore, Singapore*; ²*National University of Singapore, Singapore, Singapore*; ³*University of Muenster, Muenster, Germany*
- WOC am 9:10 **LC-MS/MS Based Methodology for Identifying Cyclooxygenase-2-Derived Anti-Proliferative Oxidized Lipids;** Sumit J. Shah; Xiaojing Liu; Suhong Zhang; Jasbir S. Arora; Nathaniel W. Snyder; Ian A. Blair; *University of Pennsylvania, Philadelphia, PA*
- WOC am 9:30 **Quantitative Profiling of PE, MMPE, DMPE and PC Species by Multiple Precursor Ion Scanning;** Mesut Bilgin¹; Eva Duchoslav²; Christer Ejsing¹; ¹*Department of Biochemistry and Molecular Biology, Odense, Denmark*; ²*AB Sciex, Concord, ON*
- WOC am 9:50 **Ultrafast Top-Down Lipidomics by Successive Acquisition of FT-MS(+)/FT-MS(-) Spectra;** Kai Schuhmann¹; Reinaldo Almeida²; Ronny Herzog¹; Mark Baumert²; Stefan R. Bornstein³; Andrej Shevchenko¹; ¹*MPI-CBG, Dresden, GERMANY*; ²*Advion BioSciences, Inc., St Neots, UK*; ³*Department of Internal Medicine III, TU Dresden, Dresden, GERMANY*
- WOC am 10:10 **Defining the Mouse Macrophage Lipidome with CLASS: a Comprehensive Lipidomics Analysis using Separation Simplification;** Richard Harkewicz; Edward A. Dennis; *University of California, San Diego, La Jolla, CA*

**GLYCOPROTEINS: NEW APPROACHES FOR
STRUCTURE ANALYSIS**

8:30 – 10:30 am

Yehia Mechref, Texas Tech University, *presiding*
Korbel Ballroom 1-2

- WOD am 8:30 **N-Glycosylation Sites of Influenza A virus Hemagglutinin and Surfactant Protein: Characterization via a Mass Spectrometry Strategy**; Nancy Leymarie; Kevan L. Hartshorn; Michael Rynkiewicz; Barbara Seaton; Joseph Zaia; *Boston University School of Medicine, Boston, MA*
- WOD am 8:50 **Towards An Automated Glycoproteomics Platform: Using Self-Consistency Rules and a Non-Specific Protease Digest for Enhanced Site-Specific Glycosylation and Glycan Heterogeneity**; John S. Strum¹; Charles C. Nwosu¹; Scott R. Kronewitter¹; Richard R. Seipert¹; Serenus Hua¹; Robert Bachelor¹; Kun Wook Park^{2,3}; Jong Shin Yoo^{2,3}; Hyun Joo An¹; Rudolf Grimm^{4,5}; Carlito B. Lebrilla^{1,6}; ¹*University of California Davis, Davis, CA*; ²*Korea Basic Science Institute, Ochang, Korea*; ³*Graduate School of Analytical Science and Techn., Daejeon, Korea*; ⁴*Agilent Technologies Inc., Santa Clara, CA*; ⁵*Robert-Mondavi Institute of Food Science UC Davis, Davis, CA*; ⁶*Dept. of Biochem. and Molecular Medicine UC Davis, Davis, CA*
- WOD am 9:10 **Targeting O-GlcNAc Modification Using HCD/ETD Product Ion Monitoring Approach on a Linear Ion Trap/Orbitrap Mass Spectrometer**; Peng Zhao¹; Rosa Viner²; Chin Fen Teo¹; David Horn²; Lance Wells¹; ¹*University of Georgia, Athens, GA*; ²*Thermo Fisher Scientific, San Jose, CA*
- WOD am 9:30 **High Level Enrichment and Characterization of Secreted O-Linked Glycopeptides** Zsuzsa Darula¹; Robert Chalkley²; Peter R Baker²; A.L. Burlingame²; Katalin F. Medzihradszky^{1,2}; ¹*Laboratory of Proteomics, BRC, Szeged, Hungary*; ²*UCSF, San Francisco, CA*
- WOD am 9:50 **A Fully Automated Workflow for Glycopeptide Analysis**; Julian Saba¹; Rosa Viner¹; Paul Shan²; Lei Xin²; Sergei Snovidia³; Edward Bodnar⁴; Kay-Hooi Khoo³; Helene Perreault⁴; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*Bioinformatics Solutions Inc., Waterloo, ON, Canada*; ³*Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan*; ⁴*University of Manitoba, Winnipeg, MB, Canada*
- WOD am 10:10 **Comparison of Glycan Distribution in Therapeutic Monoclonal Antibodies by LC-MS using mAb-Glyco-Chip and CE-LIF**; Shiaw-Lin Wu¹; Yi Wang¹; Sam Tep²; Zoran Sosic²; Yelena Lyubarskaya²; Ning Tang³; William Hancock¹; Barry Karger¹; ¹*Northeastern University, Boston, MA*; ²*Biogen Idec Inc, Cambridge, MA*; ³*Agilent Technologies, Santa Clara, CA*

INSTRUMENTATION: NEW DEVELOPMENTS IN IONIZATION

8:30 – 10:30 am

Charles N. McEwen, University of the Sciences, *presiding*
Korbel Ballroom 3-4

- WOE am 8:30 **Improved Performance of Surface Acoustic Wave Nebulization (SAWN) Using an Additional Voltage** Scott Heron¹; Christophe Masselon²; Yue Huang¹; John Edgar¹; Sung Hwan Yoon¹; David R. Goodlett¹; ¹*University of Washington, Seattle, WA*; ²*CEA Grenoble, France*
- WOE am 8:50 **Improving LC-MS Sensitivity by Using a Subambient Pressure NanoESI Source**; Keqi Tang; Ioan Marginean; Jason S. Page; Ryan T. Kelly; Richard D. Smith; *Pacific Northwest National Laboratory, Richland, WA*
- WOE am 9:10 **Analysis of Carbohydrates and Other Hydrophilic Analytes by Paper Spray Mass Spectrometry**; Nicholas Manicke; Zheng Ouyang; R. Graham Cooks; *Purdue University, West Lafayette, IN*
- WOE am 9:30 **Laser Ablation Droplet Capture for Electrospray Ambient Sampling**; Kermit K. Murray; Sung Gun Park; *Louisiana State University, Baton Rouge, LA*
- WOE am 9:50 **Inlet Ionization: An investigation into the Mechanism That Produces Ions from an Instrument-Inlet Absent of Lasers, Heat or Voltages** Vincent S. Pagnotti; Charles N. McEwen; *University of the Sciences, Philadelphia, PA*
- WOE am 10:10 **Features and Specifications of Atmospheric Pressure Free Liquid MALDI Mass Spectrometry in Combination with UHPLC**; Albina Abdrakhmanova²; Ales Charvat¹; Bernd Abel¹; ¹*Ostwald-Institute for Physical Chemistry, Leipzig, Germany*; ²*Knauer GmbH, Berlin, Germany*

WEDNESDAY MORNING ORAL SESSIONS

PK ASSAYS: NOVEL APPROACHES TO INCREASE LC-MS THROUGHPUT

8:30 – 10:30 am

Ravi Rahavendran, Pfizer Global R&D, *presiding*
Four Seasons Ballroom 1-2

- WOF am 8:30 **Moving Towards Seamless Integration of Automated Sample Preparation with LC-MS/MS for PK/PD Analysis;** Bernard Choi¹; Kyle Lady²; Rong Ling²; Lucinda Cohen¹; Xinchun Tong¹; Gino Salituro¹; ¹Merck & Co., Inc., Rahway, NJ; ²University of Michigan, Ann Arbor, MI
- WOF am 8:50 **Next Generation Sample Delivery Platform for HT-LC/MS/MS;** John Janiszewski¹; Richard Schneider¹; Hui Zhang¹; Veronica Zelesky¹; Xiaoping Zhou²; William Schramm³; Wayne Lootsma³; Felix Yiu²; ¹Pfizer Inc., Groton, CT; ²Apricot Designs, Covina, CA; ³Sound Analytics, Niantic, CT
- WOF am 9:10 **A Strategy for Implementation of Fast SPE-MS/MS into the Workflow of PK and PK/PD Sample Analysis in Drug Discovery;** Ann Brown; Novartis, Cambridge, MA
- WOF am 9:30 **Use of *in vivo* Solid Phase Microextraction as a Sample Preparation Strategy for LC-MS;** Heather Lord¹; Erasmus Cudjoe¹; Dajana Vuckovic²; Paul Togunde¹; Md Ehsanul Hoque³; Janusz Pawliszyn¹; ¹University of Waterloo, Waterloo, CANADA; ²University of Toronto, Toronto, ON; ³Trent University, Peterborough, Canada
- WOF am 9:50 **Determining Pharmacokinetics Directly from Dosed Tissue Sections by Liquid Extraction Surface Analysis Coupled to Mass Spectrometry;** Whitney Parson¹; Jamie Erickson²; Roderic Cole²; Robert W Johnson²; Stormy Koeniger²; Nari Talaty²; Annette Schwartz²; Yu Tian²; Christopher Stedman²; Gary J. Van Berkel¹; ¹Oak Ridge National Laboratory, Oak Ridge, TN; ²Abbott Laboratories, Worcester, MA
- WOF am 10:10 **Validation of an Analytical Method to Quantify a Xenobiotic in Rat Plasma Using LDTD-APCI Coupled to Tandem Mass Spectrometry;** Fedeli Olivier¹; Patricia Moliner¹; Beatrice Pradeilles¹; Laurent Rousseau¹; Bernard Julian¹; Cyril Bertrand¹; Chloe Grosjean¹; Marion Layssac¹; Christel Marcou¹; Patrice Tremblay²; Pierre Picard²; Laurence Fajas¹; Freddy Sadoun¹; Gerard Fabre¹; ¹Sanofi-Aventis, Montpellier, France; ²Phytronix Technologies, Quebec, QC

PROTEIN THERAPEUTICS: STRUCTURAL CHARACTERIZATION

8:30 – 10:30 am

Jean W. Lee, Amgen, Inc., *presiding*
Four Seasons Ballroom 3-4

- WOG am 8:30 **Advances in the Use of GeneData Expressionist for the Semi-Automated Assessment of Post-Translational Modifications in Biotherapeutics;** Jennifer F. Nemeth¹; Steven C. Pomerantz²; ¹Centocor R&D, Radnor, PA; ²Centocor Research and Development, Radnor, PA
- WOG am 8:50 **Unusual Stability of the Orally Administered Fusion Transferrin-Human Growth Protein and Interaction with its Physiological Partners: A Mass Spectrometry Study;** Cedric E. Bobst¹; Shunhai Wang¹; Wei-Chiang Shen²; Igor A. Kaltashov¹; ¹University of Massachusetts, Amherst, MA; ²University of Southern California, Los Angeles, CA
- WOG am 9:10 **Development of Mass Spectrometric and Informatics Workflows for the Automated Assessment of "Biosimilarity" for A Candidate Biosimilar Antibody;** Scott Berger; Asish Chakraborty; Hongwei Xie; Weibin Chen; Waters Corporation, Milford, MA
- WOG am 9:30 **Glycomic Perspective of Therapeutic Antibodies;** Sureyya Ozcan¹; Hyun Joo An²; Ebru Ucakturk³; Kit Lam⁴; Carlito Lebrilla²; ¹UC Davis Chemistry Department, Davis, CA; ²University of California, Davis, CA; ³Faculty of Pharmacy, University of Hacettepe, Ankara, Turkey; ⁴UC Davis Cancer Center, Sacramento, CA
- WOG am 9:50 **Characterizing HIV Specific Antibodies in Sera from Infected Individuals That Do Not Progress to AIDS;** Beatrix Ueberheide^{1,2}; Sunnie Myung^{1,3}; David Fenyo^{1,2}; Johannes F Scheid¹; Michel C Nussenzweig¹; Brian Chait¹; ¹The Rockefeller University, New York, NY; ²New York University, New York, NY; ³Merck, Union, NJ
- WOG am 10:10 **Characterizing Structure of Ion Channel TRPA1 Membrane Protein Using Mass Spectrometry;** Liwen Wang; Teresa Cvetkov; Vera Moiseenkova-Bell; Mark R.Chance; Case Western Reserve University, Cleveland, OH

WEDNESDAY AFTERNOON ORAL SESSIONS

PHOSPHOPROTEOMICS

2:30 – 4:30 pm

Arthur Moseley, Duke University, *presiding*
Wells Fargo Theatre

- WOA pm 2:30 **Combining PolyMAC-Ti and PolyMAC-Fe for In-Depth Phosphoproteome Analysis of B Cell Signaling;** Anton Iliuk; Keerthi Jayasundera; Rachel Shlutenhoffer; Renee Killins; Robert Geahlen; Weiguo Andy Tao; *Purdue University, West Lafayette, IN*
- WOA pm 2:50 **Facilitating the Enrichment and Identification of Phosphopeptides Containing Multiple Basic Residues;** Houjiang Zhou¹; Teck Yew Low¹; Marco Hennrich¹; Hanfa Zou²; Albert J. R. Heck¹; Shabaz Mohammed¹; ¹*Utrecht University, Utrecht, Netherlands*; ²*Dalian Institute of Chemical Physics, Dalian, China*
- WOA pm 3:10 **High Resolution Separations Increase Sensitivity and Coverage of Phosphoproteome Profiling;** Yuxi Wang; Feng Yang; Therese Clauss; David Stenoien; John Sandoval; Marina Gritsenko; Rui zhao; Yufeng Shen; David Camp II; Richard Smith; *PNNL, Richland, WA*
- WOA pm 3:30 **PhosphoRS, a Novel Phospho-Site Localization Tool Increasing Phosphoproteome Coverage from LC-MS/MS Data Sets;** Thomas Taus¹; Thomas Köcher¹; Peter Pichler²; Andreas Schmidt²; Hans Grensemann³; Torsten Ueckert³; Bernard Delanghe³; Karl Mechtler¹; ¹*Research Institute of Molecular Pathology, Vienna, Austria*; ²*CD Laboratory, MFPL, University of Vienna, Vienna, Austria*; ³*Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany*
- WOA pm 3:50 **Comparative Proteomic and Phosphoproteomic Profiling of Human Embryonic Stem Cells and their Pure PAX6⁺ Neuroectodermal Derivatives;** Junjie Hou; Ilyas Singec; Andrew Crain; Brian Tobe; Evan Snyder; Laurence M. Brill; *Sanford-Burnham Medical Research Institute, La Jolla, CA*
- WOA pm 4:10 **Efficiency and Reproducibility of Phosphotyrosine Peptide Immunoaffinity Capture for Quantitative Mass Spectrometry** Stacy D. Sherrod^{1,2}; Amy-Joan L. Ham¹; Daniel C. Liebler^{1,2}; ¹*Vanderbilt University School of Medicine, Nashville, TN*; ²*Jim Ayers Institute, Nashville, TN*

ION MOBILITY MASS SPECTROMETRY:

INTEGRATION INTO STRUCTURAL BIOLOGY

2:30 – 4:30 pm

John A. McLean, Vanderbilt University, *presiding*
Room 501

- WOB pm 2:30 **The Role of Native Ion Mobility Mass Spectrometry in Studying Virus Structure, Dynamics and Assembly;** Albert J.R. Heck; *Utrecht University, Utrecht, Netherlands*
- WOB pm 2:50 **Interpreting Collision Cross Sections of Protein Complexes: Models, Approximations, Errors, and Best Practices;** Matthew F Bush¹; Zoe Hall¹; Argyris Politis¹; Daniel Barsky²; Carol V Robinson¹; ¹*University of Oxford, Oxford, UK*; ²*Lawrence Livermore National Laboratory, Livermore, CA*
- WOB pm 3:10 **Towards a Structural Understanding of Regulatory Protein-sRNA Complexes by Native Mass Spectrometry Combined With Ion Mobility and Other Biophysical Techniques;** Frank Sobott¹; Anastasia Callaghan²; Charlotte Henderson²; Helen Vincent²; ¹*Center for Proteomics, University of Antwerp, Antwerp, BELGIUM*; ²*Biological Sciences, University of Portsmouth, Portsmouth, UK*
- WOB pm 3:30 **An Integrated Structural Biology Dataset Reveals Metal-Protein and Protein-Protein Interactions of Critical Importance for Amyloid Formation;** Suk-Joon Hyung; Jonathan J.S. Mayers; Jung-Suk Choi; Jeffrey R. Brender; Ayyalusamy Ramamoorthy; Mi Hee Lim; Brandon Ruotolo; *University of Michigan, Ann Arbor, MI*
- WOB pm 3:50 **Correlating Structure to Dissociation Patterns with Ion Mobility-CID/SID;** Anne E. Blackwell; Mowei Zhou; Vicki H. Wysocki; *University of Arizona, Tucson, AZ*
- WOB pm 4:10 **Intrinsic Disorder in Proteins: A Challenge for (Un)Structural Biology Met by Ion Mobility Mass Spectrometry;** Ewa Jurneczko¹; Faye Cruickshank¹; Penka Nikolova²; Iain D G Campuzano³; Michael Morris³; Perdita Barran¹; ¹*The University of Edinburgh, Edinburgh, UK*; ²*Kings College London, London, UK*; ³*Waters Corporation, Manchester, UK*

WEDNESDAY AFTERNOON ORAL SESSIONS

FUNDAMENTALS: ION-SURFACE INTERACTIONS AND PREPARATIVE MS

2:30 – 4:30 pm

Kevin Schug, University of Texas at Arlington, *presiding*
Room 401

- WOC pm 2:30 ***In situ* Analysis of Chemically Modified Surfaces Prepared by Ion Soft Landing;** Jobin Cyriac; Guangtao Li; R. Graham Cooks; *Purdue University, West Lafayette, IN*
- WOC pm 2:50 **Generation of Monolayer Protected Clusters Using Soft-Landing Ion Mobility;** William Hoffmann; Stephen Davila; Guido F. Verbeck; *University of North Texas, Denton, TX*
- WOC pm 3:10 **Preparation of Atomically Monodisperse Multiply Charged Gold Clusters on Surfaces by Soft Landing of Mass Selected Ions;** Grant Johnson¹; Thomas Priest²; Julia Laskin¹; ¹*Pacific Northwest National Laboratory, Richland, WA*; ²*University of Louisville, Louisville, Kentucky*
- WOC pm 3:30 **Polysaccharide Degradation by Atmospheric Pressure Thermal Ion Dissociation and Soft-Landing;** Pengyuan Liu¹; Zhixin Miao¹; Jennifer Colla¹; Feng Feng¹; R. Graham Cooks²; Hao Chen¹; ¹*Ohio University, Athens, OH*; ²*Purdue University, West Lafayette, IN*
- WOC pm 3:50 **The Study of Ion Transmission and Soft Landing of Macromolecules Using Multiple Quadrupoles Instrument Coupled with MALDI Ion Source;** Ting-Chang Ko; Yao-Hsin Tseng; Wen-Ping Peng; *National Dong Hwa University, Shoufeng, Hualien, TAIWAN*
- WOC pm 4:10 **Electrospray Ion Beam Deposition for Surface Science in Ultrahigh Vacuum: From Single Molecular Magnets to Proteins;** Stephan Rauschenbach; *Max-Planck-Institute FKF, Stuttgart, Germany*

CARBOHYDRATES: NEW APPROACHES FOR STRUCTURE ANALYSIS

2:30 – 4:30 pm

Ron Orlando, University of Georgia, *presiding*
Korbel Ballroom 1-2

- WOD pm 2:30 **Sequencing Intact Bikunin Glycosaminoglycan Chains by FTMS/MS;** Franklin E. Leach III¹; Tatiana Laremore²; Mellisa Ly³; Zhongping Xiao³; John Muchena¹; Jeremy Wolff⁴; Robert J. Linhardt³; Jon Amster¹; ¹*University of Georgia, Athens, GA*; ²*Penn State, University Park, PA*; ³*Rensselaer Polytechnic Institute, Troy, NY*; ⁴*Bruker Daltonics, Billerica, MA*
- WOD pm 2:50 **Characterization of Chondroitin Sulfate and Dermatan Sulfate in Squamous Cell Carcinoma by LC/MS;** Xiaofeng Shi¹; Martin Thellin²; Anders Malmström²; Joseph Zaia¹; ¹*Boston University School of Medicine, Boston, MA*; ²*Faculty of Medicine, Lund University, Lund, Sweden*
- WOD pm 3:10 **A Chemical Derivatization Strategy for Structural Analysis of Isomeric Glycosaminoglycan Oligosaccharides Using Reverse Phase LC-MSⁿ;** Rongrong Huang; Vitor H. Pomin; Joshua S. Sharp; *University of Georgia, CCRC, Athens, GA*
- WOD pm 3:30 **Detailed Studies of the 'Sidedness' of Disaccharide Dissociation in the Negative Ion Mode Using ¹⁸O-labeled Structures;** Tammy Fang¹; Chiharu Konda²; Yu Xia²; Brad Bendiak¹; ¹*University of Colorado Health Sciences Center, Aurora, CO*; ²*Purdue University, West Lafayette, IN*
- WOD pm 3:50 **Rapid Structural Assignment of N-Glycans Using an Annotated Structure Library;** Danielle Aldredge¹; Hyun Joo An¹; Ning Tang²; Keith Waddell²; Carlito Lebrilla¹; ¹*University of California, Davis, CA*; ²*Agilent Technologies, Santa Clara, CA*
- WOD pm 4:10 **Mass Spectrometric Quantification of Permethylated Glycans: ESI vs. MALDI;** Yehia Mechref; Yunli Hu; Janei DeSantos-Garcia; *Texas Tech University, Lubbock, TX*

WEDNESDAY AFTERNOON ORAL SESSIONS

INSTRUMENTATION: NEW DEVELOPMENTS IN INSTRUMENTATION

2:30 – 4:30 pm

Joshua J. Coon, University of Wisconsin-Madison, *presiding*
Korbel Ballroom 3-4

- WOE pm 2:30 **Performance Investigation of an Orbitrap Mass Analyzer Combined with a Quadrupole Mass Filter**; Jan-Peter Hauschild; Ulf Froehlich; Oliver Lange; Alexander Makarov; Eugen Damoc; Sebastian Kanngiesser; Frank Czemper; Catharina Crone; Yue Xuan; Markus Kellmann; Andreas Wieghaus; *Thermo Fisher Scientific, Bremen, Germany*
- WOE pm 2:50 **From Peptide Anions to Radical Cations: Exploring Ion Activation by UV Photodissociation**; Jennifer Brodbelt¹; James Madsen²; ¹The University of Texas, Austin, TX; ²University of Texas Austin, Austin, TX
- WOE pm 3:10 **Photo-SRM: Laser Photo-Dissociation Improves Detection Selectivity of Selected Reaction Monitoring Mode**; Quentin Enjalbert^{1,2}; Romain Simon²; Arnaud Salvador²; Rodolphe Antoine¹; Sébastien Redon^{3,4}; Mehmet Menaf Ayhan⁵; Florence Darbour⁵; Stéphane Chambert^{3,4}; Yann Bretonnière⁵; Philippe Dugourd¹; Jérôme Lemoine²; ¹CNRS et Université Lyon 1, UMR5579, LASIM, Villeurbanne, France; ²CNRS et Université Lyon 1 UMR 5180, LSA, Villeurbanne, France; ³INSA-Lyon, Villeurbanne, France; ⁴TCBMS, UMR5246, CNRS, Université Lyon 1, INSA, CPE, Villeurbanne, France; ⁵Université de Lyon, Laboratoire de Chimie de l'ENS, Lyon, France
- WOE pm 3:30 **Incorporation of Surface Induced Dissociation into an Ion Mobility – QTOF Mass Spectrometer for Post-Ion Mobility Activation**; Mowei Zhou¹; Chengsi Huang¹; Kevin Giles²; Anne Blackwell¹; Vicki Wysocki¹; ¹University of Arizona, Tucson, AZ; ²Waters Corporation, Manchester, UK
- WOE pm 3:50 **Design and Simulation of a Miniaturized Zaifman Trap for Electrostatic Storage of Ions with < 1 keV of Energy**; Ryan T. Hilger; Robert E. Santini; Scott A. Mcluckey; *Purdue University, West Lafayette, IN*
- WOE pm 4:10 **The Way to Isotopic Resolution for Hundred's kDa Mass Ions. Experimental Characterization of the New Dynamically Harmonized FTICR Cell**; Eugene Nikolaev^{1,3}; Ivan Boldin^{1,2}; Roland Jertz⁴; M Gokhan Baykut⁴; ¹Institute for Energy Problems of Chemical Physics, Moscow, Russian Federation; ²Institute of biochemical physics Rus. Acad. of Sci, Moscow, Russian Federation; ³The Institute of biomedical chemistry RAMS, Moscow, Russian Federation; ⁴Bruker Daltonics, Bremen, Germany

INFORMATICS TOOLS FOR PHARMACEUTICAL APPLICATIONS OF MASS SPECTROMETRY

2:30 – 4:30 pm

Xiuxia Du, University of North Carolina-Charlotte, *presiding*
Four Seasons Ballroom 1-2

- WOF pm 2:30 **A Data Analysis Framework for Label-Free Chemical Proteomics exemplified on the Profiling of Erlotinib and Gefitinib**; Jens Lamerz; Angélique Augustin; Guillemette Duchateau-Ngyuen; Sabrina Golling; Hélène Meistermann; Nikolaos Berntenis; Manuel Tzouros; Michel Petrovic; Giuseppe Palermo; Barbara Klughammer; Hanno Langen; Laurent Essieux; *F. Hoffmann-La Roche Ltd, Basel, Switzerland*
- WOF pm 2:50 **On the Development of a Robust and Transferable Tandem Mass Spectral Library for the Identification of Small Bioorganic Molecules**; Birthe Schubert; Herbert Oberacher; *Innsbruck Medical University, Innsbruck, Austria*
- WOF pm 3:10 **A Mathematical LC-MS Drift Cancellation Approach for Quantitative Application to High Throughput Dry Powder Inhaler Content Uniformity**; Justin Pennington; Joseph Medendorp; Brent Donovan; *Merck, Summit, NJ*
- WOF pm 3:30 **Analysis of Drug Metabolites in Wastewater Using LC/Q-TOF MS: Metabolic Profiling as a Possible Tool for Environmental Analysis**; Michael Thurman; Imma Ferrer; *University of Colorado, Boulder, CO*
- WOF pm 3:50 **Automatic Disulfide Bond Mapping and Reporting in Biotherapeutics by High Resolution LCMS**; St John Skilton; Hongwei Xie; Weibin Chen; *Waters, Milford, MA*
- WOF pm 4:10 **New Multiple Technique Data Analysis Software for Synthetic Chemists**; Alexey Aminov¹; Margaret Antler²; Tatiana S. Churanova¹; Lorne Fell²; Karim Kassam²; Vitaly Lashin¹; Mike McBrien²; Graham A. McGibbon²; ¹ACD Ltd., Moscow, RUSSIA; ²ACD/Labs, Toronto, Canada

REACTIVE METABOLITES: NOVEL LC-MS

DETECTION METHODS

2:30 – 4:30 pm

Richard D. Burton, Eli Lilly & Co., *presiding*
Four Seasons Ballroom 3-4

- WOG pm 2:30 **Fast Profiling and Identification of Reactive Metabolites in Rats Using HR-MS: Applications of Mass Defect Filter-Dependent MS/MS Acquisition;** Jie Xing¹; Kerong Zhang²; Fuying Du¹; Tian Liu¹; Mingshe Zhu³; ¹*Shandong University, Jinan, China*; ²*AB Sciex, Shanghai, China*; ³*Bristol-Myers Squibb, Princeton, NJ*
- WOG pm 2:50 **Investigation of Oxidative and Conjugative Metabolism Reactions With Liquid Chromatography / Accurate Mass High Resolution Mass Spectrometry;** Maciej Bromirski¹; Olaf Scheibner¹; Helene Faber²; Sandra Jahn²; Uwe Karst²; Hannah Simon²; ¹*Thermo Fisher Scientific, Bremen, Germany*; ²*University of Munster, Muenster, Germany*
- WOG pm 3:10 **Development of LC-PD-MS and Its Application Towards Identifying Protein Bound Metabolites, Oxidative Stress, and PTMs;** Jolene K. Diedrich; Ryan R. Julian; *University of California, Riverside, Riverside, CA*
- WOG pm 3:30 **Reactive Metabolite Detection and Characterization Using a QqTOF With Ultra-Fast Data Acquisition and Real-Time Multiple Mass Defect Filtering;** Loren Olson²; Bud Maynard¹; Shaila Hoque¹; Hesham Ghobarah²; Elliott Jones²; Heather Zhang¹; George Tonn¹; John-Michael Sauer¹; Patrick J. Rudewicz¹; ¹*Elan Pharmaceuticals, South San Francisco, CA*; ²*AB SCIEX, Foster City, CA*
- WOG pm 3:50 **LC-MS Identification and Quantification of Electrogenenerated Reactive Metabolites and Their Peptide And Protein Adducts;** Uwe Karst; Helene Faber; Hannah Simon; Anne Baumann; Sandra Jahn; Daniel Melles; *University of Münster, Münster, Germany*
- WOG pm 4:10 **Characterization and Identification of Reactive Metabolites Using Combination of High Mass Accuracy, Polarity Switching and Target Fragmentation;** Bo Wen; David Moore; *Hoffmann-La Roche, Nutley, NJ*

INFORMATICS: IDENTIFICATION

8:30 – 10:30 am

David Tabb, Vanderbilt University, *presiding*
Wells Fargo Theatre

- ThOA am 8:30 **Integrating RNA-Seq Data Improves Protein identification in Shotgun Proteomics;** Xiaojing Wang; Robbert Slebos; Daniel C. Liebler; Bing Zhang; *Vanderbilt University School of Medicine, Nashville, TN*
- ThOA am 8:50 **Using Subspectral Interval Matching to Make Novel Identifications of ETD Tandem Mass Spectra;** Viswanadham Sridhara¹; Dina L. Bai²; An Chi³; Jeffrey Shabanowitz²; Donald F. Hunt²; Lewis Y. Geer¹; ¹*National Library of Medicine, Bethesda, MD*; ²*University of Virginia, Charlottesville, VA*; ³*Merck, Boston, MA*
- ThOA am 9:10 **Identification of two Novel Proteins by de novo Sequencing Using HCD and ETD Spectra;** Hao Chi¹; Ruixiang Sun¹; Bing Yang²; Chun-Qing Song²; Chao Liu¹; Yanmei Zhao³; Wei Sun³; Long Miao³; Si-Min He¹; Meng-Qiu Dong²; ¹*Institute of Computing Technology, CAS, Beijing, China*; ²*National Institute of Biological Sciences, Beijing, CHINA*; ³*Institute of Biophysics, CAS, Beijing, CHINA*
- ThOA am 9:30 **Gapped Peptide Archives: Scalable Approach for Clustering Billions of Spectra;** Ilya Kolykhmatov; Sangtae Kim; Pavel Pevzner; *University of California, San Diego, La Jolla, CA*
- ThOA am 9:50 **Single Protein Digest Spectral Libraries: A New Tool for Quality Control in Proteomics;** Qian Dong; Bhaskar Godugu; Lisa E. Kilpatrick; Yuxue Liang; Pedatsur Neta; Xinjian Yan; Stephen Stein; *NIST, Gaithersburg, MD*
- ThOA am 10:10 **A Third Generation Spectra Correlation Algorithm and Its Implementation in Library Search, Identification of Unknowns and Metabolite ID;** Juraj Lutisan; Robert Mistrík; *HighChem, Ltd., Bratislava, Slovakia*

ASMS MEETING

4:45 – 5:30 pm

Scott A. McLuckey, *presiding*
Korbel 1-2

THURSDAY MORNING ORAL SESSIONS

FUNDAMENTALS: ION STRUCTURE AND ENERGETICS

8:30 – 10:30 am

Veronica M. Bierbaum, University of Colorado, *presiding*
Room 501

- ThOB am 8:30 **Gas-phase Ion-neutral Reaction Chemistry for Charge Manipulation: Altering the Collision Induced Dissociation Properties of Multiprotein Complexes;** Russell Bornschein; Suk-Joon Hyung; Brandon Ruotolo; *University of Michigan, Ann Arbor, MI*
- ThOB am 8:50 **Characterization of Ion Structure and Energetics in the Reactions of 1,3,5-Triazine;** John Garver¹; Zhibo Yang²; Shuji Kato²; Scott Wren³; Kristen Vogelhuber³; W. Carl Lineberger³; Veronica M. Bierbaum²; ¹*University of Colorado, Boulder, Boulder, CO*; ²*University of Colorado, Boulder, CO*; ³*JILA, University of Colorado and the NIST, Boulder, CO*
- ThOB am 9:10 **Structures, Binding Energies, and Coulomb Fission Barriers of Transition Metal Cation-Ligand Complexes;** Mary T. Rodgers; Holliness Nose; Richard Lord; Kevin T. Crampton; *Wayne State University, Detroit, MI*
- ThOB am 9:30 **Pesci [1] Versus Peters [2], Who is the Winner? Decarboxylation Versus Desulfination to Generate Coinage Metal Organometallics** George N. Khairallah¹; Lenka Sraj¹; Richard A. J. O'hair²; ¹*Bio21 Inst, Uni of Melbourne, Melbourne, Australia*; ²*University of Melbourne, Victoria, Australia*
- ThOB am 9:50 **b2 Ions: Identification of Their Structure by Their Energetics;** Peter B. Armentrout; Amy Clarke; *University of Utah, Salt Lake City, UT*
- ThOB am 10:10 **IRMPD Characterization of Metal Ion Binding to Peptides: Conserved Binding Pocket Formed by N-Terminal Aromatic Residues;** Robert C. Dunbar¹; Jeffrey Steill³; Nicolas Polfer²; Jos Oomens³; ¹*Case Western Reserve Univ, Cleveland, OH*; ²*University of Florida, Gainesville, FL*; ³*FOM Rijnhuizen, Nieuwegein, NETHERLANDS*

SYNTHETIC POLYMERS: NEW METHODS FOR ANALYSIS

8:30 – 10:30 am

Chrys Wesdemiotis, The University of Akron, *presiding*
Room 401

- ThOC am 8:30 **New Structural Insights into a Novel Geometry Polymeric System by Use of Shape-Selective MS Studies;** Charlotte Scarff²; Jonathon Snelling²; Matthias Knust¹; James Scrivens³; Charles L. Wilkins¹; ¹*University of Arkansas, Fayetteville, AR*; ²*University of Warwick, Coventry, UK*; ³*Univ of Warwick, Coventry, UK*
- ThOC am 8:50 **MALDI-TOF Imaging Mass Spectrometry - A Universal Detector for Copolymer Chromatography;** Steffen M. Weidner; Jana Falkenhagen; *Fed.Inst.f.Mat.Research, Berlin, Germany*
- ThOC am 9:10 **From Macrocycles to Molecular Spoked Wheel: Travelling Wave Ion Mobility Analysis of Metallo-Supramolecules and Supramolecular Polymers;** Xiaopeng Li; Jin-Liang Wang; Yi-Tsu Chan; George R. Newkome; Chrys Wesdemiotis; *The University of Akron, Akron, OH*
- ThOC am 9:30 **Proton Sponge Effect for Synthetic Dendrimers in the Gas Phase;** Aura Tintaru²; Sabrina Pridl⁴; Ling Peng³; Laurence Charles¹; ¹*University Aix-Marseille I & III, Marseille Cedex 20, France*; ²*Aix-Marseille University, Marseille, France*; ³*Universite de la Mediterranee, Marseille, France*; ⁴*University of Trieste, Trieste, Italy*
- ThOC am 9:50 **MALDI Techniques for Characterization of Ionomers;** Anthony P. Gies¹; David M. Hercules²; ¹*The Dow Chemical Company, Freeport, TX*; ²*Vanderbilt University, Nashville, TN*
- ThOC am 10:10 **ESI-MS and MS/MS of Low Charge State Adduct Ions of high Molar Mass Synthetic (Co)Polymers with Ammonium Compounds;** Andreas Nasioudis¹; Jan van Velde¹; Ron M.A. Heeren²; Oscar F. Van Den Brink¹; ¹*AkzoNobel RD&I, Deventer, Netherlands*; ²*FOM Inst. Atomic/Molecular Phy, Amsterdam, Netherlands*

THURSDAY MORNING ORAL SESSIONS

MEMBRANE PROTEINS

8:30 – 10:30 am

Yingming Zhao, The University of Chicago, *presiding*
Korbel Ballroom 1-2

- ThOD am 8:30 **Proteomic Characterization of the Binding Partners of Dopamine Transporter (DAT) and Functional DAT Mutants** Sarah Moore^{1,2}; Alexander Sorkin²; Christine Wu²; ¹University of Colorado Denver School of Medicine, Denver, CO; ²University of Pittsburgh School of Medicine, Pittsburgh, PA
- ThOD am 8:50 **Dysregulated Plasma Membrane Proteins of Adipocytes in Obese Mice Models Influence Their Metabolic Phenotype**; Hansjoerg Moest; ETH Zürich, Schwerzenbach, Switzerland
- ThOD am 9:10 **Top Down Characterization of Integral Membrane Proteins**; Adam Catherman¹; Dorothy Ahlf¹; Mingxi Li¹; John C. Tran¹; Amanda Berg²; Gary Valaskovic²; Neil L. Kelleher¹; ¹Northwestern University, Evanston, IL; ²New Objective, Inc., Woburn, MA
- ThOD am 9:30 **Caught in the Act: Ligand-based Receptor Capturing (LRC) on Living Cells**; Andreas Frei; Ock-Youn Jeon; Ruedi Aebersold; Erick Carreira; Bernd Wollscheid; Swiss Federal Institute of Technology, Zurich, Switzerland
- ThOD am 9:50 **Human Cell Membrane Glycan Mapping Using Mass Spectrometry**; Hyun Joo An; Mary Saunders; Shuai Wu; Jae-Han Kim; Maciej Chichlowski; Lauren Dimapasoc; David Mills; Kit Lam; Carlito Lebrilla; University of California, Davis, CA
- ThOD am 10:10 **Mapping Perturbations of the CFTR Interactome Reveals Disease-specific Protein-Protein Interactions as Potential Drug Targets**; Sandra Pankow; Casimir Bamberger; William Balch; John Yates; The Scripps Research Institute, La Jolla, CA

HIGH MASS ACCURACY/HIGH PERFORMANCE MASS SPECTROMETRY INSTRUMENTATION AND APPLICATIONS

8:30 – 10:30 am

Adam Hawkridge, North Carolina State University, *presiding*
Korbel Ballroom 3-4

- ThOE am 8:30 **Targeted Protein Quantification in Urine Samples Using a New Quadrupole-Orbitrap Mass Spectrometer**; Sebastien Gallien¹; Elodie Duriez¹; Yeoun Jin Kim¹; Bruno Domon¹; Zhiqi Hao²; Markus Kellmann³; Thomas Moehring³; Andreas Huhmer²; ¹Luxembourg Clinical Proteomics Center, Strassen, Luxembourg; ²Thermo Fisher Scientific, San Jose, CA; ³ThermoFisher Scientific, Bremen, Germany
- ThOE am 8:50 **How High Mass Accuracy Measurements will Transform Targeted Proteomics**; Derek Bailey; Graeme McAlister; Chris Rose; Alex Hebert; Craig Wenger; M. Violet Lee; Michael S. Westphall; Joshua J. Coon; University of Wisconsin, Madison, WI
- ThOE am 9:10 **Comparison of Methods for the Determination of Xenobiotics in Biological Samples: Targeted vs. Two Different General Unknown Screening (GUS) Methods**; Brad Patterson¹; Dimitri Gerostamoulos²; Olaf Drummer²; Jochen Beyer²; ¹AB SCIEX, Mulgrave, Australia; ²Victorian Institute of Forensic Medicine, Melbourne, Australia
- ThOE am 9:30 **Liquid Extraction Surface Analysis Mass Spectrometry (LESA MS): Drug Distribution and Metabolism of Diclofenac in Mouse**; Simon J. Prosser¹; Daniel Eikel¹; Stefan T. Linehan²; Keeley Murphy³; Dennis Heller²; Patrick J. Rudewicz⁴; Jack D. Henion¹; ¹Advion BioSystems Inc., Ithaca, NY; ²XenoBiotic Laboratories Inc., Plainsboro, NJ; ³Thermo Fisher Scientific, San Jose, CA; ⁴Elan Pharmaceuticals, South San Francisco, CA
- ThOE am 9:50 **Qualitative and Quantitative Cellular Similarities of the Protein Complement of the Cancer Cell Lines HepG2, PC3 and MDA-MB-231**; Scott Geromanos¹; Hans Visser¹; Arthur Moseley²; James Langridge¹; ¹Waters Corporation, Middletown, NJ; ²Duke University, Durham, NC
- ThOE am 10:10 **Characterization of Secondary Plant Metabolites by High Resolution Mass Spectrometry Imaging and Laser Ablation Electrospray Ionization**; Arton Berisha; Sabine Guenther; Zoltan Takats; Sebastian Dold; Bernhard Spengler; Andreas Römpf; Analytical Chemistry, Justus Liebig University, Giessen, Germany

THURSDAY MORNING ORAL SESSIONS

PROTEIN THERAPEUTICS: IDENTIFICATION OF METABOLITES, IMPURITIES AND DEGRADANTS

8:30 – 10:30 am

Richard B. Van Breemen, University of Illinois, *presiding*
Four Seasons Ballroom 1-2

- ThOF am 8:30 **The Use of Mass Spectrometry to Assess the Chemical Stability of Therapeutic Proteins during the Discovery Process;** Jon Fitchett; Samantha Phan; Mike Batt; Bryan Jones; Scott Wooden; *AME/Lilly Inc., San Diego, CA*
- ThOF am 8:50 **Characterization of A Therapeutic Monoclonal Antibody following Incubation in Plasma or Phosphate-Buffered Saline;** Sheng Yin; John T. Stults; *Protein Analytical Chemistry, Genentech, Inc., South San Francisco, CA*
- ThOF am 9:10 **Identification of the Product Related Impurities in a Therapeutic Monoclonal Antibody Samples Using Size Based Fractionation and LC-MS;** Richard Seipert; Matthew Mazur; David Mahon; Tun Liu; Qinwei Zhou; Richard Crowley; *ImClone Systems, Branchburg, NJ*
- ThOF am 9:30 **Quantitation of Insulin Analogs and Identification of Degradants in Serum;** Martha Stapels¹; Keith Fadgen¹; Jim Langridge¹; Thomas Rosano²; ¹*Waters Corporation, Milford, MA*; ²*Albany Medical Center Hospital and College, Albany, NY*
- ThOF am 9:50 **Top-Down LC-MALDI Identification of Protein in Mixtures of Moderate Complexity and N- and C-terminal Assignments;** Anja Resemann¹; Shannon Cornett²; Eckhardt Belau¹; Detlev Suckau¹; ¹*Bruker Daltonik GmbH, Bremen, Germany*; ²*Bruker Daltonics Inc., Fairview, TN*
- ThOF am 10:10 **Challenges and Strategies in Developing Methods for Determining Organic Residues in Protein Streams Using Liquid Chromatography and Tandem Mass Spectrometry;** John L. Snyder; Xiaoping Xia; Robert J Duff; Jon S Kauffman; *Lancaster Laboratories Inc, Lancaster, PA*

BIOMARKER ANALYSIS AND METABOLOMICS IN DRUG DISCOVERY

8:30 – 10:30 am

Petia Shipkova, Bristol-Myers Squibb, *presiding*
Four Seasons Ballroom 3-4

- ThOG am 8:30 **Metabolomic Profiling in Drug Discovery: Understanding the Factors that Influence Metabolomics Studies and Strategies to Reduce Biochemical and Chemical Noise;** Mark Sanders; David Peake; Tom McClure; *Thermo Fisher Scientific, San Jose, CA*
- ThOG am 8:50 **Pharmacometabonomics of Ginseng Extracts on Vascular Injury Induced by Chronic Homocysteine Treatment;** Lui Ed²; Hou Jirui²; Suma Ramagiri¹; Takeo Sakuma¹; Eva Duchoslav¹; Ron Bonner¹; Lyle Burton¹; David Cox¹; Tom Moy¹; ¹*AB SCIEX, Concord, Canada*; ²*University of Western Ontario, London, Canada*
- ThOG am 9:10 **Identification of Hepatic Toxicity Biomarkers Using Accurate Mass LC/MS/MS and High/Low pH Mobile Phases: A Metabonomics Approach;** Rob Plumb¹; Paul Rainville¹; Jeremy Nicholson²; ¹*Waters, Milford, MA*; ²*Imperial College, London, UK*
- ThOG am 9:30 **MS-based Detection and Quantitation of Putative Biomarkers for Ankylosing Spondylitis;** Roman Fischer¹; Moritz Wagner²; Paul Bowness³; Benedikt Kessler¹; ¹*Centre for Cellular and Molecular Physiology, Oxford, UK*; ²*Agilent Technologies, Hewlett-Packard-Strasse, Waldbronn, Germany*; ³*Weatherall Institute for Molecular Medicine, Oxford, UK*
- ThOG am 9:50 **Development of an Electrospray-Mass Spectral Database for Annotating Metabolomics Datasets: Application to the Analysis of the Adult Human Urinary Metabolome;** Aurelie Roux¹; Ying Xu¹; Jean-François Heilier²; Marie-Françoise Olivier¹; Eric Ezan¹; Jean-Claude Tabet³; Christophe Junot¹; ¹*CEA - Centre d'Etude de Saclay, Gif-Sur-Yvette, France*; ²*Institut National de Recherche et de Sécurité, Nancy, France*; ³*LCSOB, IPCM, UMR-CNRS 7201, UPMC Paris Universit s, Paris, France*
- ThOG am 10:10 **Profiling of Indole Alkaloids in Tissues of Medicinal Plants *Catharanthus roseus* and *Rauvolfia serpentina*, Using LC-TOF MS;** Mary Dawn Celiz¹; Sarah E. O'Connor²; A. Daniel Jones¹; ¹*Michigan State University, East Lansing, MI*; ²*Massachusetts Institute of Technology, Cambridge, MA*

BIOMARKERS/DISEASE SIGNATURES

2:30 – 4:30 pm

Chris Turck, Max Planck Institute, *presiding*
Wells Fargo Theatre

- ThOA pm 2:30 **High Resolution Imaging Mass Spectrometry in Arthritic Diseases;** Ron M.A. Heeren^{1,2}; Berta Cillero-Pastor¹; Sanaullah Chughtai¹; Gert Eijkel¹; Donald F. Smith²; Ljiljana Pasa-Tolic²; ¹FOM Inst. Atomic/Molecular Phy, Amsterdam, Netherlands; ²Pacific NW Nat'l Lab, Richland, WA
- ThOA pm 2:50 **Quantitative Proteomic and Metabolomic Profiling of Antidepressant Drug Action Reveals Novel Targets Beyond Monoamine Elevation;** Christian Webhofer¹; Philipp Gormanns¹; Stefan Reckow¹; Vladimir Tolstikov²; Giuseppina Maccarrone¹; Walter Ziegglänsberger¹; Inge Sillaber^{1,3}; Florian Holsboer¹; Chris Turck¹; ¹MPI of Psychiatry, Munich, GERMANY; ²Metabolomics Core, UC Davis, Davis, CA; ³Affectis Pharmaceuticals, Martinsried, Munich, GERMANY
- ThOA pm 3:10 **Meta-analysis of Cardiovascular Disease and Statin Drug Response Biomarkers in Human Patients;** William Wikoff¹; Oliver Fiehn¹; Miles Trupp²; Steven Watkins³; Rebecca Baille⁴; Ronald Krauss⁵; Rima Kaddurah-Daouk⁶; ¹University of California Davis, Davis, CA; ²SRI, Menlo Park, CA; ³Lipomics Technologies-Tethys Bioscience, West Sacramento, CA; ⁴Rosa & Co. LLC, San Carlos, CA; ⁵Children's Hospital Oakland Research Institute, Oakland, CA; ⁶Duke University Medical Center, Durham, NC
- ThOA pm 3:30 **Tracking the Proteome/Metabolome Interactions of Potential Biomarkers of Huntington Disease (HD) with LCECA and parallel LCECA/LCMSⁿ;** Erika N. Ebbel¹; Liping Sun²; Samantha Matson²; Swati Sharma²; Stephen Hersch³; Wayne R. Matson²; Catherine E. Costello¹; ¹Boston University School of Medicine, Boston, MA; ²The Edith Nourse Memorial Veterans Hospital, Bedford, MA; ³Massachusetts General Hospital, Boston, MA
- ThOA pm 3:50 **Discovery and Functional Characterization of Epigenetic Signatures of Cancer Pathogenesis;** Barry Zee; Gary Leroy; Benjamin Garcia; Princeton University, Princeton, NJ
- ThOA pm 4:10 **Measuring Kinase Pathway Activities in Normal and Cancerous Human Prostate Tissue Using an *in vitro* MS-based Kinase Assay;** Robert A. Everley¹; Ryan C. Kunz¹; Fiona E. McAllister¹; Adam S. Feldman²; Chin-Lee Wu²; Steven P. Gygi¹; ¹Harvard Medical School, Boston, MA; ²Massachusetts General Hospital, Boston, MA

FUNDAMENTALS: ION/MOLECULE AND

ION/ION INTERACTIONS

2:30 – 4:30 pm

Victor Ryzhov, Northern Illinois University, *presiding*
Room 501

- ThOB pm 2:30 **The Effect of α and β Substituents on S_N2 and E2 Reactions;** Scott Gronert; Samuel Netter; Christopher Swift; Diogo de Oliveira; Renan Joviliano; *Virginia Commonwealth University, Richmond, VA*
- ThOB pm 2:50 **Reactions of α -carboxylate Radical Anions with Dioxygen;** Tony Ly^{1,3}; Benjamin B Kirk¹; Pramesh I Hettiarachchi¹; Berwyck L J Poat^{1,4}; Adam J Trevitt¹; Gabriel da Silva²; Stephen J Blanksby¹; ¹University of Wollongong, Wollongong, Australia; ²University of Melbourne, Melbourne, Australia; ³University of Dundee, Dundee, UK; ⁴University of California, San Diego
- ThOB pm 3:10 **Gas-phase Reactivity of Various Didehydroquinolinium and Didehydroisoquinolinium Radicals Toward Aliphatic Amino Acids;** Enada F Archibald; Nelson R Vinueza; George O Pates; John J Nash; Hilikka I Kenttämä; *Purdue University, West Lafayette, IN*
- ThOB pm 3:30 **Gas Phase Ozonolysis of Deprotonated Cysteine and Cysteine Containing Peptides: Fundamentals and Potential Applications;** Timothy M. Benton¹; Huong T Pham³; Tony Ly³; George N. Khairallah²; Stephen J Blanksby³; Richard A. J. O'Hair¹; ¹University of Melbourne, Victoria, Australia; ²Bio21 Inst, Uni of Melbourne, Melbourne, Australia; ³University of Wollongong, Wollongong, NSW, Australia
- ThOB pm 3:50 **In-Silico Design of Electron Transfer Dissociation Reagents Evaluated by a Q-TOF with Glow Discharge Anion Source;** Jeffery M Brown; Keith Richardson; Iain D G Campuzano; Jonathan P Williams; Richard Denny; Barry Dyson; James Langridge; Michael Morris; *Waters Corporation, Manchester, UK*
- ThOB pm 4:10 **Probing ETD Fundamentals Using a Dedicated ETD Reaction Cell and IR Photons on a Hybrid Mass Spectrometer;** Aaron Ledvina¹; Michael S. Westphall¹; Graeme Mcalister¹; John E. P. Syka²; Jens Griep-Raming³; Joshua J. Coon¹; ¹University of Wisconsin, Madison, WI; ²Thermo Fisher Scientific, Charlottesville, VA; ³Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany

THURSDAY AFTERNOON ORAL SESSIONS

MICROORGANISMS: IDENTIFICATION AND CHARACTERIZATION

2:30 – 4:30 pm

Plamen A. Demirev, Johns Hopkins University, *presiding*
Room 401

- ThOC pm 2:30 **Staphylococcus aureus Detection and Antibiotic Susceptibility Determination Using 15N-Labeled Bacteriophage Amplification Coupled with Rapid Trypsin Digestion and MALDI-MS;** Jon Rees; Carrie Pierce; John R. Barr; *Centers for Disease Control, Atlanta, GA*
- ThOC pm 2:50 **Modified Proteins in Environmental Microbes;** Rachel O. Loo¹; Deborah R. Francoleon¹; Bryan Crable²; Housna Mouttaki²; Robert Gunsalus¹; Michael Mcinerney²; Joseph A. Loo¹; ¹*UCLA, Los Angeles, CA*; ²*University of Oklahoma, Norman, OK*
- ThOC pm 3:10 **Identification of Mechanisms of Extracellular Respiration By Shewanella oneidensis MR-1 Using Imaging Mass Spectrometry;** Brandi Heath¹; Jeramie Watrous²; Pieter Dorrestein²; Patrick Roach¹; Ljiljana Pasa-Tolic¹; Donald Smith¹; zihua zhu¹; Matthew Marshall¹; Julia Laskin¹; ¹*Pacific Northwest Natl Laboratory, Richland, WA*; ²*Univ of California, San Diego, Skaggs school, La Jolla, CA*
- ThOC pm 3:30 **Absolute Quantification of Microbial Proteomes at Different Cellular States by Directed Mass Spectrometry: Application to the Human Pathogen Leptospira Interrogans;** Alexander Schmidt¹; Martin Beck²; Johan Malmstroem³; Manfred Claassen³; Henry H. N. Lam⁴; Dave Campbell⁵; Ruedi Aebersold^{3, 6}; ¹*Biozentrum, University of Basel, Switzerland*; ²*European Molecular Biology Laboratory, Heidelberg, Germany*; ³*ETH Zürich, Switzerland*; ⁴*Hong Kong Univ of Science and Technology, Hong Kong, China*; ⁵*Inst for Systems Biology, Seattle, WA*; ⁶*Univ of Zurich, Switzerland*
- ThOC pm 3:50 **Comparing the Microbial Species and Metabolic Activities in the Gut Microbiomes of Healthy versus Crohn's Diseased Matched Human Twins;** Robert Hettich¹; Alison R. Erickson^{1, 2}; Chongle Pan¹; Nathan C. Verberkmoes¹; Manesh Shah¹; Brandi L. Cantarel³; Regina Lamendella⁴; Claire Fraser-Liggett³; Janet Jansson⁴; ¹*Oak Ridge Natl Laboratory, Oak Ridge, TN*; ²*Univ of Tennessee, Knoxville, TN*; ³*Univ of Maryland School of Medicine, Baltimore, MD*; ⁴*Lawrence Berkeley Natl Laboratory, Berkeley, CA*
- ThOC pm 4:10 **Comparative Proteome Analyses of Outer Membrane Proteins for The Differentiation of Pathogenic Vs. Nonpathogenic Bacteria Using Mass Spectrometry-Based Proteomics Approach;** Rabih Jabbour¹; Samir Deshpande²; Mary Wade³; Michael Stanford³; Charles Wicking³; Alan Zulich³; ¹*SAIC INC., Apg, MD*; ²*Science and Technology Corporation, Edgewood, MD*; ³*ECBC, APG, MD*

OLIGONUCLEOTIDES: STRUCTURE AND REACTIVITY

2:30 – 4:30 pm

Jennifer Brodbelt, The University of Texas, *presiding*
Korbel Ballroom 1-2

- ThOD pm 2:30 **Investigation of UV Induced Protein–RNA Cross-Linking by Mass Spectrometry;** Katharina Kramer¹; Florian Richter¹; Carolin Endler¹; Petra Hummel¹; Roland G. Heym²; Olexander Dybkov¹; Xiao Luo³; Reinhard Lührmann¹; Markus C. Wahl³; Dierk Niessing²; Henning Urlaub¹; ¹*Max Planck Institute for Biophysical Chemistry, Goettingen, Germany*; ²*Ludwig-Maximilians-University, Munich, Germany*; ³*Free University, Berlin, Germany*
- ThOD pm 2:50 **LC-MS/MS for Assessing the Repair of Purine Cyclonucleosides in Human Cells;** Jin Wang; Changjun You; Bifeng Yuan; Yinsheng Wang; *University of California, Riverside, CA*
- ThOD pm 3:10 **Tandem Mass Spectrometry of Platinated Oligonucleotides;** Adrien Nyakas; Silvan, R. Stucki; Stefan Schuerch; *University of Bern, Bern, Switzerland*
- ThOD pm 3:30 **Rapid Extraction of siRNA from Human Serum Using Surface Modified Strong Anion Exchange (SAX) Magnetic Particles;** Guofeng Ye; Michael Beverly; *Novartis Institutes for BioMedical Research, Cambridge, MA*
- ThOD pm 3:50 **Pseudouridine Quantification in Transfer and Ribosomal RNAs by Selected Reaction Monitoring Mass Spectrometry;** Balasubrahmanyam Addepalli; Patrick A. Limbach; *University of Cincinnati, Cincinnati, OH*
- ThOD pm 4:10 **Photoreactivity of Oligonucleotides under UV and VUV Irradiation** Frederic Rosu¹; Laure Joly¹; Alexandre Giuliani²; Valerie Gabelica¹; Laurent Nahon²; Edwin De Pauw¹; ¹*University of Liege, Liège, Belgium*; ²*Synchrotron Soleil, Gif-Sur-Yvette, France*

METAL-BIOMOLECULAR COMPLEXES:

STRUCTURE AND REACTIONS

2:30 – 4:30 pm

Frantisek Turecek, University of Washington, *presiding*
 Korbel Ballroom 3-4

BIOMARKERS OF DRUG/METABOLITE TOXICITY:

LC-MS METHODS

2:30 – 4:30 pm

Edward Kerns, Discovery ADME, *presiding*
 Four Seasons Ballroom 1-2

- ThOE pm 2:30 **Mass Spectrometry of Metal Ions Going Towards the Condensed Phase**; Detlef Schroder; *IOCB, Prague, Czech Republic*
- ThOE pm 2:50 **Electron Capture Dissociation of Metal-Adducted Oligosaccharides: An Energy-Dependence Study and Its Application to Isomer Differentiation**; Xiang Yu; Cheng Lin; Catherine E. Costello; *Boston University School of Medicine, Boston, MA*
- ThOE pm 3:10 **Analysis of Ribosomal Protein S1 and Messenger Ribonucleic Acid (mRNA) Cross-links by ICPMS and LC-MS/MS**; Brittany Catron¹; Joseph Caruso¹; Jacqueline Giliberti²; Gary Janssen²; Patrick A. Limbach¹; ¹*University of Cincinnati, Cincinnati, OH*; ²*Miami University, Oxford, OH*
- ThOE pm 3:30 **Metal Ions and Mass Spectrometry Assist Synthetic Biology**; Yana Berezovskaya¹; Craig Armstrong²; Massimiliano Porrini¹; Derek Woolfson^{2, 3}; Perdita Barran¹; ¹*School of Chemistry, University of Edinburgh, Edinburgh, UK*; ²*School of Chemistry, University of Bristol, Bristol, UK*; ³*Department of Biochemistry, University of Bristol, Bristol, UK*
- ThOE pm 3:50 **Collision-induced Dissociation versus Electron Transfer Dissociation of Metal-adducted Oligosaccharides**; Mallikharjuna Bogala; Carolyn J. Cassady; *University of Alabama, Tuscaloosa, AL*
- ThOE pm 4:10 **Infrared Spectroscopy of Monomeric and Dimeric Complexes of Histidine with Multiply Charged Transition Metal (Zn and Cd) Cations**; Theresa Cooper¹; Collin Howder²; Giel Berden³; Jos Oomens³; Peter B. Armentrout¹; ¹*University of Utah, Salt Lake City, UT*; ²*Spring Arbor University, Spring Arbor, MI*; ³*FOM Rijnhuizen, Nieuwegein, Netherlands*

- ThOF pm 2:30 **Metabolomics Analysis Reveals Elevation of 3-Indoxyl Sulfate in Plasma and Brain during Drug-induced Acute Renal Failure in Mice**; Joanna Pols¹; Swapan K. Chowdhury¹; Mark Wirth²; Michael Milburn³; Danny Alexander³; Kevin Alton²; ¹*Merck Research Laboratories, Rahway, NJ*; ²*Merck & Co., Kenilworth, NJ*; ³*Metabolon Inc., Durham, NC*
- ThOF pm 2:50 **Biomarkers of Exposure and Biological Response- Relationship between Nicotine Metabolites and Isoprostane Excretion in Urine**; Clementina Mesaros; Kannan Rangiah; Anil Vachani; Ian A. Blair; *University of Pennsylvania, Philadelphia, PA*
- ThOF pm 3:10 **Investigation of the Effect of Cocaine Use and Withdrawal in Rat Models Using Comprehensive And Reproducible Ion-Current-Based Proteomic Expression Profiling**; Xiaosheng Jiang¹; Jun Li¹; Chengjian Tu¹; Alexis Thompson²; Jun Qu¹; ¹*Pharmaceutical Sciences/SUNY-Buffalo, Buffalo, NY*; ²*Research Institute on Additions/SUNY-Buffalo, Buffalo, NY*
- ThOF pm 3:30 **Toxicoproteomics for the Identification of Nephrotoxicity Biomarkers and Pathways**; Li-Rong Yu; Zhiguang Li; Yuan Gao; Tao Chen; *National Center for Toxicological Research, US FDA, Jefferson, AR*
- ThOF pm 3:50 **Mass Spectrometry-based Proteomics of Aristolochic Acids Induced Nephrotoxicity in Experimental Animal Model**; Marijana Rucevic; Lucas Breen; Feilei Huang; Lulu Cao; Douglas Hixson; Djuro Josic; *COBRE CCRD, RI Hospital / Brown University, Providence, RI*
- ThOF pm 4:10 **Exploring Galactosamine Hepatotoxicity through UPLC-MS Metabolic Profiling: Biomarker Elucidation and Confirmation**; Elizabeth J Want¹; Konstantina Spagou¹; Estitxu Rico²; Rosa Maria Alonso²; ¹*Imperial College, London, UK*; ²*University of Basque Country/EHU, Bilbao, Spain*

THURSDAY AFTERNOON ORAL SESSIONS

AMBIENT DESORPTION IONIZATION TECHNIQUES: NEW DEVELOPMENTS AND APPLICATIONS

2:30 – 4:30 pm

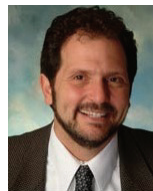
Daniel Austin, Brigham Young University, *presiding*
Four Seasons Ballroom 3-4

- ThOG pm 2:30 ***In-vivo*, Real-time Identification of Tissues During Brain Surgery**; Karl C Schaefer¹; Julia Balog²; Stefanie Gerbig³; Zoltan Takats¹; ¹*Justus-Liebig-University, Giessen, Germany*; ²*Semmelweis University, Budapest, Hungary*; ³*Justus-Liebig-Universität, Giessen, Germany*
- ThOG pm 2:50 **Synchronized Inductive Desorption Electrospray Ionization Mass Spectrometry**; Guangming Huang; Guangtao Li; Jason S Ducan; Zheng Ouyang; R. Graham Cooks; *Purdue University, West Lafayette, IN*
- ThOG pm 3:10 **Ambient Ionization of Unprepared Samples Using Surface Acoustic Waves**; David Go¹; Jenny Ho^{1,2}; Ming K. Tan¹; Hsueh-Chia Chang¹; Leslie Yeo²; James Friend²; ¹*University of Notre Dame, Notre Dame, IN*; ²*University of Monash, Melbourne, Australia*
- ThOG pm 3:30 **Microsecond Time-Resolved Desorption Electrospray Ionization-Mass Spectrometry (DESI-MS)**; Zhixin Miao; Hao Chen; *Ohio University, Athens, OH*
- ThOG pm 3:50 **Fundamentals and Applications of Inlet Ionization: Ionization Methods for Small and Large Molecules**; Charles N. Mcewen¹; Vincent Pagnotti²; ¹*Univ. of the Sciences, Philadelphia, PA*; ²*University of the Sciences, Philadelphia, PA*
- ThOG pm 4:10 **Combining Laser Ablation/Liquid Phase Collection Surface Sampling and Electrospray Ionization Mass Spectrometry**; Olga Ovchinnikova; Vilmos Kertesz; Gary J. Van Berkel; *Oak Ridge National Laboratory, Oak Ridge, TN*

PLENARY SESSION

4:45 - 5:30 pm

Susan T. Weintraub, University of Texas Health Science Center, *presiding*
Wells Fargo Theatre



Why Are We Surprised by Only Some of the Things that We See? Visual Illusions, the Brain, and Baseball

Arthur Shapiro
American University

7:30-8:00 amAll Monday posters should be set
10:30 am-2:30 pm All poster authors should be present
11:45 am-12:15 pm . Lunch break for odd-numbered posters
12:15-12:45 pm.....Lunch break for even-numbered posters
7:30-8:00 pm Remove all Monday posters

New Developments in Ionization I, 001 - 021
Direct Ionization: Applications I, 022 - 048
Ion Mobility: Instrumentation and Fundamentals, 049 - 064
GC-MS: Instrumentation and Applications, 065 - 083
High Mass Accuracy/High Performance MS: Instrumentation, 084 - 108
Atmosphere/Aerosol Chemistry, 109 - 112
Ion-Surface Interactions and Preparative MS, 113 - 114
Small Molecule: Qualitative Analysis, 115 - 136
Small Molecule: Quantitative Analysis, 137 - 167
LC-MS: Chromatography - Small Molecule, 168 - 200
LC-MS: Sample Preparation - Peptides, 201 - 218
LC-MS: Chromatography - Peptides, 219 - 232
Lipids: Identification and Structural Analysis, 233 - 253
Lipids: General, 254 - 273
Carbohydrates: Characterization, 274 - 293
Nucleic Acids I, 294 - 311
Metabolomics: Sample Preparation, 312 - 318
Metabolomics: Quantitative Analysis, 319 - 338
Diagnostic Clinical Chemistry I, 339 - 357
Elemental Analysis, 358 - 361
Environmental Analysis: General, 362 - 387
Homeland Security, 388 - 401
Food Safety, 402 - 424
Informatics: Fragmentation Mechanism, 425 - 436
Informatics: Peptide Identification and Characterization, 437 - 470
Neuropeptides: Qualitative and Quantitative Analysis, 471 - 476
Phosphopeptides: Enrichment Methods, 477 - 489
Phosphopeptides: Sequence Analysis, 490 - 495
Peptidomics, 496 - 508
Peptides: Quantitative Analysis - Metabolic Labelling, 509 - 520
Peptides: General, 521 - 529
Microbial Analysis, 530 - 556
Intact Proteins: Sequence Analysis, 557 - 572
Recombinant Proteins: Qualitative Analysis, 573 - 574
Proteomics: Separation, 575 - 583
Proteomics: New Approaches - Instrumentation, 584 - 603
Proteomics: Protein Complexes, 604 - 622
Proteins: Covalent Labeling, 623 - 633
Biomolecular Structure Analysis: Covalent Labeling, 634 - 651
Biomarkers: Quantitative Analysis, 652 - 667
Biomarkers: Discovery-Cancer, 668 - 694

Special 1 Mon & Tues only. **PRG-2011: Defining the Interaction Between Users and Suppliers of Proteomics Services;** David Hawke²; Tracy Andacht¹; Maureen K. Bunger³; Cory Bystrom⁴; Lawrence Dangott⁵; Henrik Molina⁶; Robert Moritz⁷; Robert Settlege⁸; Chris Turck⁹; ¹Centers for Disease Control and Prevention, Lawrenceville, GA; ²UT- M.D. Anderson Cancer Center, Houston, TX; ³RTI International, Research Triangle Park, NC; ⁴Quest Diagnostics, San Juan Capistrano, CA; ⁵Texas A&M University, College Station, TX; ⁶Centre de Regulacio Genomica (CRG), Barcelona, SPAIN; ⁷Institute for Systems Biology, Seattle, WA; ⁸Virginia Bioinformatics Institute, Blacksburg, VA; ⁹Max Planck Institute, Munich, Germany

Special 2 Wed & Thurs only. **ABRF-sPRG2011 Study: Development and Characterization of a Comprehensive Standard for Analysis of Post-translational Modifications;** Alexander R. Ivanov¹; Christopher Colangelo²; Craig Dufresne³; James Farmer⁴; David B. Friedman⁵; Chris Kinsinger⁶; Kathryn S. Lilley¹¹; Karl Mechtler⁷; Brett Phinney⁸; Kristie Rose⁵; Scott A. Shaffer⁹; Susan T. Weintraub¹⁰; ¹Harvard University HSPH, Boston, MA; ²Yale University, New Haven, CT; ³Thermo Fisher Scientific, West Palm Beach, FL; ⁴U. of Virginia, Charlottesville, VA; ⁵Vanderbilt Univ School of Medicine, Nashville, TN; ⁶NIH NCI, Gaithersburg, MD; ⁷IMP Research Institute of MO, Vienna, Austria; ⁸University of CA, Davis, CA; ⁹University of Massachusetts Medical School, Worcester, MA; ¹⁰Univ. of Texas HSC, San Antonio, TX; ¹¹University of Cambridge, UK

NEW DEVELOPMENTS IN IONIZATION I, 001 - 021

- MP 001 **Novel Derivatization Strategies for Biomarker Analysis using APLI MS;** Eduard Deibel¹; Ralf Schiewek²; Klaus J. Brockmann¹; Thorsten Benter¹; Oliver J. Schmitz¹; ¹University of Wuppertal, Wuppertal, Germany; ²Leiden University Medical Center, Leiden, The Netherlands
- MP 002 **GC-MS Performance of a Laminar Flow API Source Including APCI/PAPI, APLI and CAPI for Multi-Mode Operation;** Sonia Klee; Hendrik Kersten; Walter Wissdorf; Valerie Derpmann; Klaus J. Brockmann; Oliver J. Schmitz; Dennis Klink; Thorsten Benter; University of Wuppertal, Wuppertal, Germany
- MP 003 **Ultra-sensitive Gas Chromatographic Analysis of PAHs with a Temperature-controlled APLI-source;** Dennis Klink; Klaus J. Brockmann; Thorsten Benter; Oliver J. Schmitz; University of Wuppertal, Wuppertal, Germany
- MP 004 **Photoelectron Induced Atmospheric Pressure Ionization (PAPI) - A Selective Ionization Method for Molecules with High Electron Affinities;** Valerie Derpmann; Klaus J. Brockmann; Thorsten Benter; University of Wuppertal, Wuppertal, Germany
- MP 005 **In-situ MS Monitoring of Atmospheric Degradation Product Studies of Aromatic Hydrocarbons with APPI and APLI;** Ian Barnes; Hendrik Kersten; Iustinian Bejan; Thorsten Benter; University of Wuppertal, Wuppertal, Germany
- MP 006 **Highly Efficient Ionization of Nitro-aromatic Compounds using Photoelectron Induced Atmospheric Pressure Ionization (PAPI);** Valerie Derpmann; Hendrik Kersten; Hannah Sonderfeld; Ralf Koppmann; Iustinian Bejan; Joerg Kleffmann; Thorsten Benter; University of Wuppertal, Wuppertal, GERMANY
- MP 007 **Adjusting the Laser Wavelength to the Peak Absorption of Novel Halogen-substituted MALDI Matrices for Enhanced MS Performance;** Thorsten Wolfgang Jaskolla^{1, 2}; Jens Soltwisch¹; Franz Hillenkamp¹; Michael Karas²; Klaus Dreisewerd¹; ¹University of Muenster, Muenster, Germany; ²Goethe University Frankfurt, Frankfurt am Main, Germany
- MP 008 **A Novel MALDI Matrix Source Utilizing Soft-Landing Ion Mobility to Rapidly Deposit Ag Nanoparticles for Use as MALDI Matrices;**

- Stephen Davila; William Hoffmann; Guido F. Verbeck; *University of North Texas, Denton, TX*
- MP 009 **Matrix-Assisted Inlet Ionization (MAII) Methods Operating Without Voltage or Laser to Produce Highly Charged Ions: What Makes a Matrix a Better Matrix?**; Yue Ren; Christopher Lietz; Alicia Richards; Beixi Wang; Ellen D. Inutan; Sarah Trimpin; *Wayne State University, Detroit, MI*
- MP 010 **Optimizing Conditions for Multiply Charged Ion Production in AP MALDI**; Alexey Kononikhin^{1,3}; Andrea Rocker²; Alexey Boldyrev¹; Igor Popov^{1,3}; Alexander Spasskiy¹; Eugene Nikolaev^{1,3}; ¹*Institute for Energy Problems of Chemical Physics, Moscow, Russia*; ²*Max-Planck Institute for Medical Research, Heidelberg, Germany*; ³*Emanuel Institute of Biochemical Physics RAS, Moscow, Russia*
- MP 011 **Matrix-Free Laser Desorption/Ionization of Lipid Analytes on Metal Oxide Surfaces**; Casey Mcalpin; Kent Voorhees; Ryan Richards; April Corpuz; *Colorado School of Mines, Golden, CO*
- MP 012 **Characterization of the UV- and IR-Matrix-Assisted Laser Desorption Ionization (MALDESI) Ionization Source with Air Amplifier**; Jeremy Barry; Guillaume Robichaud; David C. Muddiman; *North Carolina State University, Raleigh, NC*
- MP 013 **Atmospheric Pressure Laser-Induced Acoustic Desorption Chemical Ionization (AP/LIAD-CI) for Global Hydrocarbon Analysis**; Leonard Nyadong; Amy McKenna; Christopher L. Hendrickson; Ryan P. Rodgers; Alan G. Marshall; *National High Magnetic Field Laboratory, Tallahassee, FL*
- MP 014 **Highly Charged Protein Ions Generated by an UV Matrix using Various Laser Wavelengths**; Beixi Wang¹; Ellen Inutan¹; Lu Yan¹; James Wager-Miller²; Ken Mackie²; Arthur Suits¹; Sarah Trimpin¹; ¹*Wayne State University, Detroit, MI*; ²*Indiana University, Bloomington, IN*
- MP 015 **Investigating the Instrumental Optimization and Sensitivity of Laserspray Ionization for Protein Analysis**; Diana L. Sardelis; Charles N. McEwen; Catherine Bentzley; *University of the Sciences, Philadelphia, PA*
- MP 016 **A Commercial Intermediate Pressure MALDI-IMS-MS Producing Multiply Charged Laserspray Ionization Ions**; Ellen D. Inutan¹; Beixi Wang¹; James Wager-Miller²; Ken Mackie²; Sarah Trimpin¹; ¹*Wayne State University, Detroit, MI*; ²*Indiana University, Bloomington, IN*
- MP 017 **An Atmospheric Pressure Photo-Ionization Source Based on a Window-less Atmospheric Pressure Spark Discharge**; Faezeh Dousty¹; Rob O'Brien¹; Thorsten Benter²; Hendrik Kersten²; ¹*UBC Okanagan, Kelowna, Canada*; ²*University of Wuppertal, Wuppertal, Germany*
- MP 018 **EUV-laser-ablation Mass Spectrometry Depth Profiling of Compound Semiconductor Heterostructures**; Ilya Kuznetsov^{1,2}; Feng Dong^{1,3}; Jorge Filevich^{1,2}; Elliot R. Bernstein^{1,3}; Dean C. Crick⁴; Michael McNeil⁴; Weilun Chao⁶; Erik H. Anderson⁶; Yanwei Liu^{1,5}; Anne Sakdinawat^{1,5}; David T. Attwood^{1,5}; Jorge J. Rocca^{1,2}; Carmen Menoni^{1,2}; ¹*NSF Center for EUV Science and Technology, Fort Collins, CO*; ²*Dept. of Electrical & Computer Engineering, CSU, Fort Collins, CO*; ³*Department of Chemistry, CSU, Fort Collins, CO*; ⁴*Dept. Microbiology, Immunology and Pathology, CSU, Fort Collins, CO*; ⁵*EECS Dept., University of California, Berkeley, CA*; ⁶*Center for x-ray optics, LBNL, Berkeley, CA*
- MP 019 **Photoemission Ambient Pressure Ionization (PAPI) with a UV LED for the Detection of Organic Vapors and Surface Residues**; Luke C. Short; *Pacific Northwest National Laboratory, Richland, WA*
- MP 020 **Windowless Miniature Spark Discharge Light Sources for Efficient Generation of VUV Radiation Below 100 nm for On-capillary APPI**; Hendrik Kersten¹; Klaus J. Brockmann¹; Rob O'Brien²; Thorsten Benter¹; ¹*University of Wuppertal, Wuppertal, Germany*; ²*UBC Okanagan, Kelowna, BC*
- MP 021 **Miniature Microplasma Discharge-Desorption Atmospheric Pressure Photo-ionization (MD-DAPPI) Source for Ambient Mass Spectrometry**; Asiri Galhena; Joshua Symonds; Facundo Fernandez; Thomas Orlando; *Georgia Institute of Technology, Atlanta, GA*
- DIRECT IONIZATION: APPLICATIONS I, 022 - 048**
- MP 022 **The Rapid Identification of the Impurities in 2-Naphthalenamides using Atmospheric Pressure Solids Analysis Probe with Ion Mobility Mass Spectrometry**; Hefeng Pan; Göran Lundin; *AstraZeneca, Södertälje, Sweden*
- MP 023 **Evaluation of Atmospheric Pressure Solids Analysis Probe Coupled to Mass Spectrometry for the Determination of Cleaning Assay of Budesonide**; Göran Lundin; Hefeng Pan; *AstraZeneca, Södertälje, Sweden*
- MP 024 **Evaluation of a Hybrid Linear Ion Trap – Triple Quadrupole MS System for Real-Time Monitoring of Ambient Air Pollutants**; Nicholas Karellas¹; Peter Kovarik²; Jeffery Rivera²; David Cox²; Robert Ellis²; Tom Moy²; Takeo Sakuma²; ¹*Ontario Ministry of the Environment, Toronto, ON*; ²*AB SCIEX, Concord, ON*
- MP 025 **Highthroughput Screening of 1,4-butanediol Production in Fermentation Samples using LDTD APCI Ionization Source Coupled to a Benchtop Orbitrap MS**; Julia Khandurina¹; Patrice Tremblay²; Nicholas Duczak, Jr³; ¹*Genomatica, San Diego, CA*; ²*Phytionix Technologies, Quebec, QC*; ³*ThermoFisher Scientific, Somerset, NJ*
- MP 026 **Direct Mass Spectrometric Analysis of Ozone-initiated Terpene Reaction Products Using Low Temperature Plasma Ionization**; Asger Nørgaard¹; Anni Vibenholt¹; Mario Benassi²; Per Axel Clausen¹; Peder Wolkoff¹; ¹*Natl Research Centre for the Working Environment, Copenhagen, Denmark*; ²*Justus-Liebig University, Giessen, Germany*
- MP 027 **Direct Mass Spectrometric Analysis of PM_{2.5} Filters Sampled in Dwellings using Low Temperature Plasma Ionization**; Anni Vibenholt; Asger W. Nørgaard; Per A. Clausen; Peder Wolkoff; *Natl Research Centre for the Working Environment, Copenhagen, Denmark*
- MP 028 **Detection of Opioids in Breath**; Christian Berchtold¹; Lukas Meier¹; Youssef Daali²; Denis Morel²; Bernard Walder²; Renato Zenobi¹; ¹*ETH Zürich, Zürich, Switzerland*; ²*University Hospital of Geneva, Geneva, Switzerland*

- MP 029 **Spray Desorption Collection: An Alternative to Swabbing for Pharmaceutical Cleaning Validation;** Shashank Jain; Amy Heiser; Andre Venter; *Western Michigan Univ, Kalamazoo, MI*
- MP 030 **Strategies for Rapid Screening and Analysis of Pesticides in Food and Water Matrix using DAPCI-MS and DESI-MS;** Joseph H. Kennedy¹; Brian C. Laughlin²; Justin Wiseman²; ¹*Prosolia, Inc, Indianapolis, IN*; ²*Prosolia, Inc., Indianapolis, IN*
- MP 031 **Simultaneous Analysis of Saturated and Unsaturated, Non-polar and Polar Hydrocarbons by Using Saturated Hydrocarbon Solvents in HPLC/APCI Mass Spectrometry;** Jinshan Gao¹; David Borton¹; Benjamin Owen¹; Zhicheng Jin²; Hilkka Kenttamaa¹; ¹*Chemistry Department of Purdue University, West Lafayette, IN*; ²*Johns Hopkins University, Baltimore, MD*
- MP 032 **Thermal Desorption / Tandem Quadrupole MS for Rapid Analysis of Complex Heterogeneous Mixtures for Active Components and Degradation By-Products;** Tim Jenkins¹; Eleanor Riches¹; Peter Lee¹; Michael O'leary²; ¹*Waters Corporation, Manchester, UK*; ²*Waters Corp, Milford, MA*
- MP 033 **Rapid Characterization of The Proteins Stored in Solutions by Liquid Electrospray Laser Desorption Ionization (ELDI) Mass Spectrometry;** Yi-Tzu Cho; Jentaie Shiea; *National Sun Yat-Sen Univ., Kaohsiung, TAIWAN*
- MP 034 **Direct Electrospray Probe (DEP) Mass Spectrometry for Characterizing the Chemical Compounds Absorbed in Fibers;** Minzong Huang; Jentaie Shiea; *National Sun Yat-Sen Univ., Kaohsiung, Taiwan*
- MP 035 **On-Line Monitoring Aldol Reaction by Liquid Electrospray Laser Desorption/Ionization Mass Spectrometry;** Chu-Nian Cheng; Jentaie Shiea; *National Sun Yat-Sen Univ., Kaohsiung, Taiwan*
- MP 036 **1D and 2D Spatial Chromatographic Readout with Liquid Microjunction Surface Sampling Probe/Electrospray Ionization Mass Spectrometry Systems;** Matthew Walworth; *Oak Ridge National Lab/Department of Chemistry UTK, Knoxville, TN*
- MP 037 **Analysis of Tissue Samples by Liquid Extraction Surface Analysis (LESA) Coupled to Differential Ion Mobility (DMS) High Resolution MS/MS;** David Cox¹; Thomas Covey¹; J.C. Yves Leblanc¹; Brad Schnieder¹; Gary J. Van Berkel²; Vilmos Kertesz³; Paul Moench⁴; Jimmy Flarakos⁴; ¹*AB SCIEX, Concord, CANADA*; ²*Oak Ridge National Laboratory, Oak Ridge, TN*; ³*Oak Ridge National Lab, Oak Ridge, TN*; ⁴*Novartis (NIBR), East Hanover, NJ*
- MP 038 **Quantitation of Structural Changes in Hindered Amine Light Stabilizers within Coil Coatings by Desorption Electrospray Ionization-Mass Spectrometry;** Martin R. L. Paine¹; Philip J. Barker²; Stephen J Blanksby¹; ¹*University of Wollongong, Wollongong, Australia*; ²*BlueScope Steel Research, Port Kembla, Australia*
- MP 039 **Applications of ASAP and EESI Ionisation Approaches Coupled with Travelling Wave Ion Mobility Mass Spectrometry;** James Scrivens¹; Charlotte Scarff¹; Charles L. Wilkins²; Jonathon Snelling¹; ¹*University of Warwick, Coventry, UK*; ²*University of Arkansas, Fayetteville, AR*
- MP 040 **Venturi Easy Ambient Sonic Spray Ionization Monitoring of Multicomponent Reactions;** Vanessa Gonçalves Dos Santos¹; Thais Regiani¹; Marla Narciso Godoi¹; Mirela B. Coelho¹; Rodrigo O. M. A. de Souza²; Simon J. Garden²; Marcos N Eberlin¹; ¹*Thomson Mass Spectrometry Laboratory, Campinas, Brazil*; ²*Federal University of Rio de Janeiro, Rio de Janeiro, Brazil*
- MP 041 **Thermal Assisted Easy Ambient Sonic-Spray Ionization (T-EASI) for Analysis of Triacylglycerides (TAG) in Meat Matrices;** Marcos N Eberlin¹; Andréia M Porcari¹; Rosana Maria Alberici¹; Christina Ferreira¹; Jesuá Vergílio Visentainer^{1,2}; ¹*Thomson Lab UNICAMP, Campinas, Sp, Brazil*; ²*UEM, Maringá, PR, Brazil*
- MP 042 **Measurement of Biodiesel/Diesel Blend Levels by Easy Ambient Sonic-spray Ionization Mass Spectrometry;** Ildenize B.S.Cunha¹; Rosana Maria Alberici¹; Rosineide Costa Simas¹; Anna Maria A.P.Fernandes¹; Gilberto de Sa²; Romeo Daroda³; Marcos N Eberlin⁴; ¹*Thomson Mass Spectrometry Laboratory, UNICAMP, Campinas-SP, Brazil*; ²*University of Pernambuco, Recife - PE, Brazil*; ³*National Institute of Metrology, Standardization a, Duque de Caxias, RJ, Brazil*; ⁴*Thomson Lab UNICAMP, Campinas, SP, Brazil*
- MP 043 **Effects of Triacylglyceride Molecular Structure on Ionization Efficiency in the Easy Ambient Sonic-spray Ionization Technique;** Rosana M. Alberici¹; Anna Maria A. P. Fernandes¹; Ildenize B. S. Cunha¹; Rosineide C. Simas¹; Daniel Barrera-Arellano²; Marcos N. Eberlin¹; ¹*Thomson Mass Spectrometry Laboratory, UNICAMP, Campinas, Brazil*; ²*Fats and Oils Laboratory, UNICAMP, Campinas, Brazil*
- MP 044 **Calcinated Layer-by-Layer Gold Nanoparticle Array for Direct Detection of Peptides and Small Molecules through Surface Assisted Laser Desorption/Ionization Mass Spectrometry;** Chih-Yuan Chen; *Riverside, CA*
- MP 045 **Direct Detection of Fatty Acid Ethyl Esters using Low Temperature Plasma (LTP) Ambient Ionization Mass Spectrometry for Rapid Bacterial Differentiation;** Jingyao (Isabella) Zhang¹; Anthony Costa¹; Weiguo Andy Tao^{1,2}; R. Graham Cooks¹; ¹*Department of Chemistry, Purdue University, West Lafayette, IN*; ²*Department of Biochemistry, Purdue University, West Lafayette, IN*
- MP 046 **Direct and Quantitative Analysis of Acylcarnitines in Serum and Whole Blood Using Paper Spray Mass Spectrometry;** Qian Yang¹; Nicholas Manicke¹; Chris Petucci²; R. Graham Cooks¹; Zheng Ouyang¹; ¹*Purdue University, West Lafayette, IN*; ²*Sanford-Burnham Medical Research Institute, Orlando, FL*
- MP 047 **Direct Analysis of Therapeutic Drugs in Dried Blood Spots using Paper Spray and a Miniature Mass Spectrometer;** Zhiping Zhang¹; Nicholas Manicke^{2,3}; Wei Xu^{1,3}; R. Graham Cooks^{2,3}; Zheng Ouyang^{1,3}; ¹*Weldon School of Biomedical Engineering, Purdue Un, West Lafayette, IN*; ²*Department of Chemistry, Purdue University, West Lafayette, IN*; ³*Center for*

- MP 048 *Analytical Instrumentation Development, West Lafayette, IN*
Direct Analysis of Biological Tissue by Paper Spray Mass Spectrometry; He Wang; Nicholas Manicke; Qian Yang; Lingxing Zheng; Riyi Shi; R. Graham Cooks; Zheng Ouyang; *Purdue University, West Lafayette, IN*

ION MOBILITY: INSTRUMENTATION AND FUNDAMENTALS, 049 - 064

- MP 049 **Ion Mobility Mass Spectrometry combined with a Laser Induced Liquid Beam/Droplet Desorption Source;** Ales Charvat¹; Albina Abdrakhmanova²; Bernd Abel¹; ¹*Ostwald-Institute for Physical Chemistry, Leipzig, Germany*; ²*Knauer GmbH, Berlin, Germany*
- MP 050 **An Electrospray Ionization-Ion Mobility-Mass Spectrometer with Modular Periodic-Focusing DC Ion Guide;** Junho Jeon; Ryan Blase; Chaminda M. Gamage; David H. Russell; *Texas A&M University, College Station, TX*
- MP 051 **Improving the Apparent Resolution of Differential Mobility Separation-Mass Spectrometry (DMS-MS) using Principle Component Variable Grouping (PCVG);** Chris Lock; Gordana Ivosev; J.C. Yves Leblanc; Ron Bonner; Brad Schneider; Thomas Covey; *AB Sciex, Concord, ON*
- MP 052 **Modifier and Field Effects for Differential Mobility Spectrometry Separations of Protonated Isomeric Dipeptides;** Hassan Javaheri¹; Voislav Blagojevic²; Alexander Chramow²; Bradley Schneider¹; Thomas Covey¹; Diethard K. Bohme²; ¹*AB SCIEX, Concord, Canada*; ²*York University, Toronto, ON*
- MP 053 **Optimization of High Field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS) Separations;** Samantha L. Isenberg; Paul M. Armistead; Gary L. Glish; *University of North Carolina, Chapel Hill, NC*
- MP 054 **Linked Scanning of the Carrier Gas Composition and Compensation Voltage to Increase Resolution of a Planar FAIMS Device;** Alice Pilo¹; Mark Ridgeway¹; Andrew Hampton¹; Samantha Isenberg¹; Desmond Kaplan²; Melvin A. Park²; Gary L. Glish¹; ¹*University of North Carolina, Chapel Hill, NC*; ²*Bruker Daltonics, inc., Billerica, MA*
- MP 055 **Trapped Ion Mobility Spectrometry – Mass Spectrometry (TIMS-MS) for the Analysis of Biomolecules;** Desmond Kaplan¹; Francisco Fernandez-Lima²; Melvin A. Park¹; ¹*Bruker Daltonics, Inc., Billerica, MA*; ²*Texas A&M University, College Station, TX*
- MP 056 **Characterization of a High Field FAIMS System;** Michael Belford; Jean-Jacques Dunyach; Satendra Prasad; *Thermo Fisher Scientific, San Jose, CA*
- MP 057 **Increased Ion Capacity of a Circular Drift Tube in Frequency Scanning Mode;** Rebecca S. Glaskin; Jeffrey A. Everett; Stephen J. Valentine; David E. Clemmer; *Indiana University, Bloomington, IN*
- MP 058 **Design Requirements for Quantitative DMS/MS with Chemically Modified Separations;** Bradley Schneider; Thomas Covey; *AB SCIEX, Concord, Canada*
- MP 059 **Modification of Ion Mobility Separation using Volatile Organic Dopants on a Quadrupole-**

Ion Mobility-Orthogonal Time-of-Flight Mass Spectrometer; Martin Green; Kevin Giles; Keith Richardson; Martin Palmer; *Waters Corporation, Manchester, UK*

- MP 060 **Ion Mobility-Mass Spectrometry Studies of Transition Metal-ligand Complexes;** Victoria Wright¹; Fernando Castro-Gómez²; Carles Bo^{2,3}; Steven Christie¹; Colin Creaser¹; ¹*Loughborough University, Loughborough, UK*; ²*Institute of Chemical Research of Catalonia, Tarragona, Spain*; ³*Universitat Rovira i Virgili, Tarragona, Spain*
- MP 061 **Internal Energy of Ions in Travelling Wave Ion Mobility Spectrometry;** Denis Morsa; Edwin De Pauw; Valerie Gabelica; *University of Liege, Belgium, Liège, Belgium*
- MP 062 **Effect of Charge-induced Gas Polarization on the Measured Electrical Mobilities of Spherical, Multiply-charged Ionic Liquid Nanodrops;** Juan Fernandez Garcia; Juan Fernandez de la Mora; *Yale Univ, New Haven, CT*
- MP 063 **Trapped Ion Mobility Spectrometry – Mass Spectrometry (TIMS-MS);** Francisco A. Fernandez-Lima¹; Desmond Kaplan²; Juergen Suetering²; Melvin A. Park²; ¹*Texas A&M University, College Station, TX*; ²*Bruker Daltonics, Inc., Billerica, MA*
- MP 064 **A Comparison of Laserspray Ionization with Electrospray Ionization for Structural Characterization of Ubiquitin Protein Ions;** Cory Manly; Ellen D. Inutan; Christopher Lietz; Sarah Trimpin; *Wayne State University, Detroit, MI*

GC-MS: INSTRUMENTATION AND APPLICATIONS, 065 - 083

- MP 065 **GC/APCI-FTMS – A Novel Tool for the Analysis of Volatile Compounds in Complex Mixtures;** Matthias Witt; *Bruker Daltonik GmbH, Bremen, Germany*
- MP 066 **Characterization of Hydrogenation Reactions and Products of 1,4-bis(phenethyl)benzene (DEB) with Ambient Gas Chromatography and High-resolution Mass Spectrometry;** James Hochrein; Steven Thornberg; *Sandia National Laboratories, Albuquerque, NM*
- MP 067 **Development of a Low Power Gas Chromatograph-Mass Spectrometer for In-Situ Detection of Organics in Martian Soil;** Veronica Pinnick^{1,7}; Arnaud Buch²; Friso H. W. Van Amerom³; Ryan M. Danell⁴; William Brinckerhoff⁵; Paul Mahaffy⁶; Robert J. Cotter^{1,7}; ¹*Middle Atlantic MS Laboratory, Baltimore, MD*; ²*Ecole Centrale Paris, Paris, France*; ³*SRI International, St. Petersburg, FL*; ⁴*Danell Consulting, Greenville, NC*; ⁵*NASA GSFC, Greenbelt, MD*; ⁶*NASA/Goddard, Greenbelt, MD*; ⁷*Middle Atlantic MS Laboratory, Baltimore, MD*
- MP 068 **Challenging Applications Analysis by GC-MS with Supersonic Molecular Beams – An Alternative to LC-MS;** Aviv Amirav; Alexander Gordin; Alexander B. Fialkov; *Tel-Aviv University, Tel-Aviv, Israel*
- MP 069 **Gas Chromatography-Mass Spectrometry Combined with Hollow Fiber Drop-to-drop Solvent Microextraction for Determination of Antidepressants Drugs in Human Urine Sample;** Kavita Tapadia; *National, Raipur(Cg), India*

- MP 070 **Determination of Furan by Isotope Dilution Method with Solid-Phase Microextraction-Gas Chromatograph/Mass Spectrometer in Heat-processed Foods;** Cheon-Ho Jo; Sung-Kug Park; Junghyuck Suh; Ock-Jin Paek; Young-Woon Kang; Hoon Choi; Meehye Kim; *Korea Food and Drug Administration, Cheongwon, South Korea*
- MP 071 **Development of a Sensitive and Reliable Method for the Measurement of VOC Migration from Food Packaging; GC-TOF/MS vs. GC- Quadrupole/MS;** Petra Gerhards¹; Manfred Möller²; Pierre Schanen¹; Gerhard Horner¹; ¹ALMSCO International, Llantrisant, UK; ²UK-Aachen, Aachen, Germany
- MP 072 **Development of Automated Liquid-Phase Microextraction-Gas Chromatography/Mass Spectrometry;** Cynthia Melanie Lahey^{1,2}; Chanbasha Basheer²; Lai Chin Loo¹; Hian Kee Lee²; ¹Shimadzu (Asia Pacific) Pte Ltd, Singapore; ²National University of Singapore, Singapore
- MP 073 **Comprehensive GCxGC TOFMS Method for Simultaneous Analysis of Dioxins, PBDEs and PCBs;** Anthony Adeuya; Jeffrey Archer; *Arkansas Regional Laboratory, US FDA, Jefferson, AR*
- MP 074 **Identification and Quantification of Acetylated Urinary Steroids by Comprehensive GCxGC-fast Quadrupole MS using Ammonia Positive Chemical Ionization;** Ying Zhang¹; Herbert Tobias¹; Richard J. Auchus²; J Thomas Brenna¹; ¹Cornell University, Ithaca, NY; ²University of Texas Southwestern Medical Center, Dallas, TX
- MP 075 **Analysis of Bisphosphonates as their t-Butyl-dimethylsilyl Derivatives Via GC/MS;** Thomas P. Mawhinney; Deborah Chance; James Waters; *University of Missouri, Columbia, MO*
- MP 076 **Gas Chromatography/Electrospray Ionization Combined with High Resolution Mass Spectrometry (GC-ESI/HRMS) to Characterize Volatile Organic Compounds;** Sy-Chyi Cheng²; Chun-Chi Chen¹; Jentaie Shiea¹; ¹National Sun Yat-Sen Univ., Kaohsiung, TAIWAN; ²Institute of Forensic Medicine, Ministry of Justice, Taipei, Taiwan
- MP 077 **Mass Spectra of Derivatives of hydroxy-, mercapto- and aminobenzenecarboxylic acids;** Nino Todua; Kirill Tretyakov; Stephen Stein; Anzor Mikaia; *National Institute of Standards and Technology, Gaithersburg, MD*
- MP 078 **Identification of Sex Pheromones from Male and Female African Brown House Snakes, Lamprophis Fuliginosus by GC/MS and GC/MS/MS;** Jan Crowley¹; Robert Aldridge²; John Turk¹; Anthony Wilmes²; ¹Washington University, St Louis, MO; ²St Louis University, St Louis, MO
- MP 079 **Development of a Sensitive Method for the Measurement of Nitrosamines in Rubber Articles using GC-PCI-MS/MS;** Joerg Riener; *Agilent Technologies, Waldbronn, Germany*
- MP 080 **GC/MS Analysis of the Apical Droplet from Culex Quinquefasciatus Egg Rafts;** Hillary Lathrop¹; Ulrich R. Bernier²; Sandra Allan²; Richard A. Yost¹; ¹University of Florida, Gainesville, FL; ²USDA-ARS-CMAVE, Gainesville, FL
- MP 081 **Accurate Mass GC/MS for the Structural Elucidation of Impurities Observed in Intermediates from the Synthesis of the γ-Secretase Inhibitor BMS-708163;** Michael Peddicord; John Thornton; *Bristol-Myers Squibb, New Brunswick, NJ*
- MP 082 **Automatic and Seamless Calibration of a Quadrupole GC/MS for High Mass Accuracy and High Spectral Accuracy;** Hongliang Xu; Ming Gu; Yongdong Wang; *Cerno Bioscience, Danbury, CT*
- MP 083 **Simple Equilibrium Distribution Sampling Device for Calibration of GC-MS Systems;** Xiaofeng Xie¹; Tai Truong¹; Brian Sparano²; Anthony Rands³; Edgar Lee³; Dennis Tolley¹; Milton Lee¹; ¹Brigham Young University, Provo, UT; ²Smiths Detection, Danbury, CT; ³Torion Technologies, American Fork, UT
- HIGH MASS ACCURACY/HIGH PERFORMANCE MS: INSTRUMENTATION, 084 - 108**
- MP 084 **Broadband Phase Correction of FT-ICR Mass Spectra and the Parameters Controlling the Phase Function;** Yulin Qi¹; Steve L VanOrden²; Peter B. O'connor¹; ¹University of Warwick, Coventry, UK; ²Bruker Daltonics, Massachusetts, United States of America
- MP 085 **Improving IR irradiation Performance in QqTOF MS of Protein Complex Ions by using Pulsed Gas and q0 Trapping;** Ayman El-Faramawy^{1,2}; Yuzhu Guo²; Udo Verkerk²; Bruce Thomson¹; K W Michael Siu²; ¹AB SCIEX, Concord, Canada; ²CRMS, York University, Toronto, ON
- MP 086 **Magnetic Field Inhomogeneity: Measurement, Consequences, and Compensation for Improved FT-ICR Mass Measurement;** Joshua Savory¹; Nathan Kaiser¹; Brian Ruddy¹; Steve Beu²; John Paul Quinn¹; Chris Hendrickson¹; Alan G. Marshall¹; ¹National High Magnetic Field Laboratory, Tallahassee, FL; ²S C Beu Consulting, Austin, TX
- MP 087 **Improved Transfer and Trapping of Ions for FT-ICR MS;** Nathan Kaiser¹; Joshua Savory¹; John Paul Quinn¹; Steve Beu²; Chris Hendrickson¹; Alan G. Marshall¹; ¹National High Magnetic Field Laboratory, Tallahassee, FL; ²S C Beu Consulting, Austin, TX
- MP 088 **Characterization of Post-Injection Ion Kinetic Energy and Spatial Distribution in External Source FT-ICR MS;** Steve Beu¹; Joshua Savory²; Nathan Kaiser²; Chris Hendrickson²; Alan G. Marshall³; ¹S C Beu Consulting, Austin, TX; ²National High Magnetic Field Laboratory, Tallahassee, FL; ³Ion Cyclotron Resonance Prog, Tallahassee, FL
- MP 089 **Investigation of Isotope Ratios using an LTQ-Orbitrap XL;** Christopher Williams¹; Ruth Godfrey²; Gareth Brenton^{1,2}; ¹EPSRC NMSSC, Swansea University, Swansea, UK; ²Institute of Mass Spectrometry, Swansea University, Swansea, UK
- MP 090 **Speciation of Silicates by High Resolution Mass Spectrometry;** Hung Anthony Pham; *UOP LLC, A Honeywell Company, Des Plaines, IL*
- MP 091 **Sensitive and Robust Accurate Mass Analysis of Small Molecules Using a Dual-Spray Thermal Gradient Focusing Electrospray Ionization (ESI) Source;** Shane E. Tichy; Craig Love; Alex Mordehai; *Agilent Technologies, Santa Clara, CA*
- MP 092 **Increased Analytical Performance on a Hybrid Iontrap-FTMS Mass Spectrometer with**

- MP 093 **a Compact Orbitrap Mass Analyzer**; Martin Zeller; Catharina Crone; Mathias Mueller; Eugen Damoc; Eduard Denisov; Alexander Makarov; Dirk Nolting; Thomas Moehring; Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany
- MP 094 **Enhanced FT for Orbitrap Mass Spectrometry**; Oliver Lange; Eugen Damoc; Andreas Wieghaus; Alexander Makarov; Thermo Fisher Scientific, Bremen, Germany
- MP 095 **Evaluation of Frequency Shifts in Particle-In-Cell Ion Trajectory Simulations of Harmonized FT-ICR MS Analyzer Cells**; Franklin E. Leach III¹; Andriy Kharchenko; Gleb Vladimirov³; Konstantin Aizikov; Peter B. O'Connor⁵; Eugene Nikolaev³; Ron M.A. Heeren²; I. Jonathan Amster¹; ¹University of Georgia, Athens, GA; ²FOM Institute for Atomic and Molecular Physics, Amsterdam, Netherlands; ³The Institute for Energy Problems of Chemical Phys, Moscow, Russian Federation; ⁴BUSM, Boston, MA; ⁵University of Warwick, Coventry, UK
- MP 096 **Improving Quantification in Time of Flight Mass (TOF) Spectrometers by Optimizing Detector Response**; Stephen Ritzau; Paul Mitchell; Photonis USA, Inc., Sturbridge, MA
- MP 097 **Spectral Errors in Fourier Transform Mass Spectrometry Revisited**; Anton N. Kozhinov; Sasa M. Miladinovic; Yury O. Tsybin; Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
- MP 098 **New Method of Ion Beam Shaping for Increased Sensitivity and Performance Stability of TOF MS**; James Bertsch; Michael Ugarov; Agilent Technologies, Santa Clara, CA
- MP 099 **Reproducibility and Efficiency Evaluation of Identification and Quantification Strategies for Complex Sample Analysis using 1D-SDS PAGE, SCX-fractionation and UPLC/MS/MS**; Ya-Juan Wang; Daniela Schlatzer; Giridharan Gokulrangan; Sara Whitson; Xiao-Lin Li; Fred Hazlett; Janna Kiselar; Mark Chance; Case Western Reserve University, Cleveland, OH
- MP 100 **Theoretical Considerations and Pressure Effects on Harmonic Compensated FT-ICR Ion Trapping Cell Performance at 12 and 15 Tesla Magnetic Field**; Errol Robinson¹; Aleksey Tolmachev¹; Christian Berg²; Donald Smith¹; Shawna Hengel¹; Rosalie Chu¹; Thomas Fillmore¹; Gordon Anderson¹; Ljiljana Pasa-Tolic¹; ¹Pacific Northwest National Laboratory, Richland, WA; ²Bruker Daltonics Inc., Billerica, MA
- MP 101 **Extending the Limit of Quantitation and Limit of Detection of a Quadrupole Time-of-flight Mass Spectrometer Down to Low Parts-per trillion Range**; Christian Klein; Mikhail Ugarov; Michael Flanagan; William Barry; George Stafford; Agilent Technologies, Santa Clara, CA
- MP 102 **Dynamic Range Limitation in FT ICR MS caused by Coulomb Interactions of Ion Clouds**; Yury Kostyukevich; Gleb Vladimirov; Eugene Nikolaev; The Institute for Energy Problems of Chemical Phys, Moscow, Russian Federation
- MP 103 **Ion Cloud Stabilization Via Ion-ion Interactions in an ICR Cell with Inhomogeneous Magnetic and Inharmonic Electric Fields**; Gleb Vladimirov¹; Yury Kostyukevich¹; Christopher L. Hendrickson³; Greg T. Blakney⁴; Alan G. Marshall²; Eugene Nikolaev^{1, 5}; ¹The Institute for Energy Problems of Chemical Phys, Moscow, Russian Federation; ²Ion Cyclotron Resonance Prog, Tallahassee, FL; ³National High Magnetic Field Laboratory, Tallahassee, FL; ⁴National ICR Program at NHMFL, Tallahassee, FL; ⁵The Institute of biochemical physics RAS, Moscow, Russian federation
- MP 104 **Multiple C-Trap Fills as a Tool for Massive Parallelization of Orbitrap Mass Spectrometry- A New Concept for Targeted Mass Analysis**; Oliver Lange; Jan-Peter Hauschild; Alexander Makarov; Ulf Fröhlich; Catharina Crone; Yue Xuan; Markus Kellmann; Andreas Wieghaus; Thermo Fisher Scientific, Bremen, Germany
- MP 105 **Spectra of Harmonics in the New Dynamically Harmonized FTICR cell**; Ivan Boldin¹; Roland Jertz³; M Gokhan Baykut³; Eugene Nikolaev^{1, 2}; ¹The Institute for Energy Problems of Chemical Phys, Moscow, Russian Federation; ²The Institute of biochemical physics RAS, Moscow, Russian Federation; ³Bruker Daltonics, Bremen, Germany
- MP 106 **Accurate Peptide Fragment Mass Analysis: Multiplexed Peptide Identification and Quantification**; Chad Weisbrod; Michael R. Hoopmann; Jimmy Eng; James Bruce; University of Washington, Seattle, WA
- MP 107 **A Novel Quantification Approach in Proteomics Using a Quadrupole-Orbitrap Mass Spectrometer**; Bruno Doman¹; Sebastien Gallien¹; Zhiqi Hao²; Markus Kellmann³; Thomas Moehring³; Andreas Huhmer²; ¹Luxembourg Clinical Proteomics Center, Strassen, Luxembourg; ²Thermo Fisher Scientific, San Jose, CA; ³ThermoFisher Scientific, Bremen, Germany
- MP 108 **Orbitrap Mass Spectrometry with Resolving Powers above 500,000 and 1,000,000 on Chromatographic Time Scale**; Eduard Denisov; Eugen Damoc; Alexander Makarov; Oliver Lange; Thermo Fisher Scientific, Bremen, Germany
- MP 109 **First Application of a Multi-reflection Time-of-Flight Mass Separator to Radioactive Ion Beams**; Robert N. Wolf¹; Dietrich Beck²; Klaus Blaum³; Christine Böhm³; Christopher Borgmann³; Martin Breitenfeldt⁴; R. Burcu Cakirli³; Sebastian George⁵; Frank Herfurth²; Alexander Herlert⁶; Magdalena Kowalska⁷; Susanne Kreim³; Dave Lunney⁸; Sarah Naimi⁹; Dennis Neidherr³; Marco Rosenbusch¹; Stefan Schwarz²; Lutz Schweikhard¹; Juliane Stanja¹⁰; Kai Zuber¹⁰; ¹University of Greifswald, Greifswald, Germany; ²GSI Helmholtz Centre for Heavy Ion Research GmbH, Darmstadt, Germany; ³Max Planck Institute for Nuclear Physics, Heidelberg, Germany; ⁴KU Leuven, Leuven, Belgium; ⁵NSCL, Michigan State University, East Lansing, MI; ⁶University of Manchester, Manchester, UK; ⁷CERN, Geneva, Switzerland; ⁸CSNSM-IN2P3-CNRS, Orsay, France; ⁹Nishina Center for Accelerator Based Science RIKEN, Wako, Japan; ¹⁰TU Dresden, Dresden, Germany

ATMOSPHERE/AEROSOL CHEMISTRY, 109 - 112

- MP 109 **Airborne Chemical Ionization Mass Spectrometry Measurements of Ammonia and Implications for Ammonium Nitrate Formation in California**; John B. Nowak^{1, 2}; J. Andrew Neuman^{1, 2}; Roya Bahreini^{1, 2}; Ann

- Middlebrook²; Charles A. Brock²; Gregory J. Frost^{1,2}; John S. Holloway^{1,2}; Stuart A. McKeen^{1,2}; Jeff Peischl^{1,2}; Ilana Pollack^{1,2}; James M. Roberts²; Thomas B. Ryerson²; Michael Trainer²; David D. Parrish²; ¹CIRES, University of Colorado at Boulder, Boulder, CO; ²NOAA Earth System Research Laboratory (ESRL), Boulder, CO
- MP 110 **A Self-Adjusting Single Particle Mass Spectrometer for Deployment in Remote Environments**; Pedro Campuzano Jost¹; Jason Schroder²; Allan K. Bertram²; ¹University of Colorado Boulder, Boulder, CO; ²University of British Columbia, Vancouver, Canada
- MP 111 **Ambient Ionization of Pyrolyzed Products and Analysis with Mass Spectrometry**; Edwin Mitchell; Piriya Wongkongkathap; Alessandra Ferzoco; Gary L. Glish; University of North Carolina, Chapel Hill, NC
- MP 112 **Localized Laser Heating for Vaporization of Particles in an Aerosol Quadrupole Ion Trap Mass Spectrometer**; Piriya Wongkongkathap¹; G. Asher Newsome²; Michael Tolocka¹; Gary L. Glish¹; ¹University of North Carolina, Chapel Hill, NC; ²FDA/CFSAN, College Park, MD

ION-SURFACE INTERACTIONS AND PREPARATIVE MS, 113 - 114

- MP 113 **Formation of H₂⁺ by Ultra Low energy Collisions of Protons on Water Ice**; Soumabha Bag¹; Martin R. S. McCoustra²; T. Pradeep¹; ¹IIT Madras, Chennai, INDIA; ²Heriot-Watt University, Edinburgh, UK
- MP 114 **Efficient Reactive Landing of Dendrimer Ions onto NHS-SAM Surface**; Qichi Hu; Julia Laskin; Pacific Northwest National Laboratory, Richland, WA

SMALL MOLECULE: QUALITATIVE ANALYSIS, 115 - 136

- MP 115 **The Identification of Nicotine in Ancient Maya Vessel (500 to 900 AD)**; Dmitri Zagorevski¹; Jennifer Loughmiller-Newman²; ¹Rensselaer Polytechnic Institute, Troy, NY; ²University at Albany, Albany, NY
- MP 116 **Liquid Chromatography-mass Spectrometric Characterization of Sulfation of N-acetylcysteine Conjugated Bile Acids by a Rat Liver Cytosolic Fraction**; Shigeo Ikegawa¹; Toshihiro Sakai¹; Risa Nakai¹; Tateaki Wakamiya¹; Takashi Iida²; Alan F. Hofmann³; Kuniko Mitamura¹; ¹Kinki University, Higashi-Osaka, Japan; ²Nihon University, Tokyo, Japan; ³University of California, San Diego, La Jolla, CA
- MP 117 **Liquid Chromatography/Mass Spectrometric Characterization of Non-enzymatic Acylation of Amino or Thiol Groups of Bionucleophiles by the Choly-adenylate or Choly-CoA Thioester**; Kuniko Mitamura¹; Eriko Aoyama¹; Toshihiro Sakai¹; Takashi Iida²; Alan F. Hofmann³; Shigeo Ikegawa¹; ¹Kinki University, Higashi-Osaka, JAPAN; ²Nihon University, Tokyo, Japan; ³University of California, San Diego, La Jolla, CA
- MP 118 **Direct Fe₂O₃ Speciation in Solid State Materials by Pulsed Millisecond Radio Frequency Glow Discharge Time-of-Flight Mass Spectrometry**; Guodong Gu; Megan DeJesus; Fred King; West Virginia University, Morgantown, WV
- MP 119 **A Novel Automated 2D-LCMS-IT-TOF System Compatible with Non-volatile Salts Applied to**

- Accelerating Impurity ID Workflow in Chemistry, Manufacturing and Controls**; Ichiro Hirano; Yusuke Inohana; Tairo Ogura; Yoshikatsu Umemura; Hiroyuki Yasuda; Yoshihiro Hayakawa; Shimadzu Corporation, Kyoto, Japan
- MP 120 **Structural and Quantitative Analysis of Plant Hormone and its Metabolites with LC-MS/MS**; Natsuyo Asano¹; Jun Watanabe¹; Junko Iida¹; Yoko Matsuda²; Hisashi Miyagawa²; ¹Shimadzu Corporation, Kyoto, Japan; ²Graduate School of Agriculture, Kyoto University, Kyoto, Japan
- MP 121 **Structural Elucidation of Quinazolines – a Radical Change of Approach**; G. John Langley¹; Angelika Galezowska¹; Mark W. Harrison²; ¹University of Southampton, Southampton, UK; ²AstraZeneca, Macclesfield, UK
- MP 122 **High Speed Polarity Switching MS/MS Applied to Polymer Additives Analysis**; Kiyomi Arakawa; Toshikazu Minohata; Natsuyo Asano; Jun Watanabe; Shimadzu Corporation, Kyoto, Japan
- MP 123 **Applying Japanese Pharmacopeia Draft Purity Test Methods to Atrovastatin Calcium Hydrate Impurity Profiling using 2D-LCMS-IT-TOF System**; Tairo Ogura; Ichiro Hirano; Yusuke Inohana; Yoshihiro Hayakawa; Tsutomu Nakai; Shimadzu Corporation, Kyoto, Japan
- MP 124 **Analysis of Small Molecules by Nano Liquid Chromatography – Direct Electron Ionization Mass Spectrometry**; Cornelia Flender; Michael Karas; University of Frankfurt, Frankfurt, Germany
- MP 125 **Development of Small Molecule Analysis Methods Using Nano-Assisted Laser Desorption Ionization TOF/TOF (NALDI TOF/TOF) for the Detection of Agrochemicals**; Avanna U. Jackson; Jesse L. Balcer; Yelena Adelfinskaya; Suresh P. Annangudi; Mingming Ma; Jeffrey Gilbert; Dow AgroSciences, Indianapolis, IN
- MP 126 **Electron-induced Dissociation: A New LC MS/MS Method for the Structural Characterisation of Pharmaceutical Molecules**; Aruna Prakash¹; Michael Smith¹; Glenn Hurst¹; Ci Yan¹; Martin Sims²; Anthony W.T. Bristow²; Jackie Mosely¹; ¹Durham University, Durham, UK; ²AstraZeneca, Macclesfield, UK
- MP 127 **Differentiation of Dihydroxyarene Isomers using Metal Complexation and Electrospray Ionization Mass Spectrometry**; Matias Butler; Pau Arroyo Mañez; Gabriela M. Cabrera; Universidad de Buenos Aires, Buenos Aires, Argentina
- MP 128 **Advantages of Ambient Ionization GC-MS in Analysis of Polymers**; Baiba Cabovska¹; Douglas Stevens²; John Cunningham¹; Arthur Bailey¹; Sam Shum¹; ¹Mannkind Corporation, Danbury, CT; ²Waters Corporation, Milford, MA
- MP 129 **Clarifying the Mechanisms of HALS Oxidation by Tandem Mass Spectrometry**; David L. Marshall¹; Martin R. L. Paine¹; Philip J. Barker²; Stephen J. Blanksby¹; ¹University of Wollongong, Wollongong, Australia; ²BlueScope Steel Research, Port Kembla, Australia
- MP 130 **Analysis of Impurities in Melatonin by LC/TOF-MS**; Sharanya Reddy^{1,2}; Shida Shen^{1,2}; Eugene Davidov^{1,2}; Adam J. Patkin^{1,2}; ¹PerkinElmer, Inc., Shelton, CT; ²PerkinElmer, Inc., Branford, CT

- MP 131 **FT-ICR-MS Study of Novel Organometallic Compounds as Potential Anticarcinogenics: Interaction with Nucleobases;** Juan Davalos¹; Andrés Guerrero¹; Santiago Gómez²; Antonio Chana¹; Rebeca Herrero¹; ¹Rocasolano Physical Chemistry Institute (CSIC), Madrid, Spain; ²Rey Juan Carlos University, Madrid, Spain
- MP 132 **Structural Elucidation of Small Molecules using Q-TOF and LTQ Orbitrap;** Gustaf Hulthe¹; Lena M von Sydow¹; Marie Tysk Rönnqvist²; ¹AstraZeneca R&D Mölndal, Mölndal, Sweden; ²AstraZeneca R&D, Södertälje, Sweden
- MP 133 **Automated Molecular Formula Determination in Open Access LC/MS in Drug Discovery Applications;** Vladimir Capka¹; Sharon Tentarelli¹; Hongliang Xu²; ¹Astra Zeneca R&D Boston, Waltham, MA; ²Cerno Bioscience, Danbury, CT
- MP 134 **Mass Spectrometry and Art Conservation: A Case Study with Historically Significant Textiles' or "Why are the Curtains Turning Brown"?** Christina Cole¹; Linda Eaton²; John Wright³; ¹U of Delaware, Department of Art Conservation, Newark, DE; ²Winterthur Museum, Garden & Library, Wilmington, DE; ³Bruker Daltonics, Fremont, CA
- MP 135 **Small Molecule Analyses with High Resolution MALDI-TOF/TOF and High-Energy CID;** John Dane¹; Masaaki Ubukata¹; Robert B. Cody¹; Ayumi Kubo²; ¹JEOL USA, Inc., Peabody, MA; ²JEOL Ltd., Tokyo, JAPAN
- MP 136 **Validation of Liquid Chromatography-Tandem Mass Spectrometry Method for Determination of Total Nitrofurantoin Metabolites in Shrimp in APCI Mode;** Mark Henry; Haejung An; Teresa Cain; Bichsa Tran; John Cheng; Han C. Paek; Dennis Farley; ¹US FDA, Irvine, CA
- SMALL MOLECULE: QUANTITATIVE ANALYSIS, 137 - 167**
- MP 137 **Isomer Conversion and Other Effects on Accuracy of Vitamin D Measurement by Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS);** Min Huang; Doug Winters; Covance, Nutrition Chemistry and Food Safety, Madison, WI
- MP 138 **Heart-Cut Column Switching Liquid Chromatography and Tandem Mass Spectrometry for the Quantification of Psychosine in Mouse Brain;** Xuntian Jiang; Washington University, St. Louis, MO
- MP 139 **High Resolution Accurate Mass Spectrometry in Regulated Bioanalysis: Full-scan MS Detection to Quantify Prednisone and Prednisolone in Human Plasma;** Eliza N. Fung; Mohammed Jemal; Craig Titsch; Jianing Zeng; Timothy Olah; Yuan-Qing Xia; Bristol-Myers Squibb Company, Lawrenceville, NJ
- MP 140 **Development of an LC/MS/MS Method for the Sub-ppm Level Quantification of 30 Oligomeric Genotoxic Polyethyleneglycol Besylates in Generic Clopidogrel Tablets;** Wei Ding; Yande Huang; Baoning Su; Jeff Dai; Scott A Miller; John Grosso; Mark S. Bolgar; Bristol-Myers Squibb, New Brunswick, NJ
- MP 141 **Quantitative Determination of Five Prostanoids in Rat Spleen by Ultra-high Performance Liquid Chromatography-electrospray Tandem Mass Spectrometry;** Philip S. Wong; Bernd Bruenner; Christopher James; Amgen, Thousand Oaks, CA
- MP 142 **Impact of a Potential Newly Discovered Isobaric Metabolite of Fluvastatin on the Accuracy of Bioanalytical Data;** Cynthia Côté; Jean-Nicholas Mess; Marie-Pierre Taillon; Sylvain Latour; Milton Furtado; Fabio Garofolo; ¹Algorithme Pharma Inc., Laval (Montreal), Quebec, Canada
- MP 143 **Severe Impact of Hemolysis on Fluvoxamine Long-Term Stability;** Marie-Pierre Taillon; Milton Furtado; Fabio Garofolo; ¹Algorithme Pharma Inc., Laval (Montreal), Quebec, Canada
- MP 144 **DBS On-Card Derivatization: "An Easy & Alternative Form for Sample Handling to Overcome the Biological Matrix Instability of Thiorphan";** Marie-Pierre Taillon; Cynthia Côté; Jean-Nicholas Mess; Milton Furtado; Fabio Garofolo; ¹Algorithme Pharma Inc., Laval (Montreal), Quebec, Canada
- MP 145 **Advanced Application of a High Resolution Quadrupole Time-of-Flight Mass Spectrometer to Resolve Chemical Noise in Regulated Bioanalysis;** Jean-Nicholas Mess¹; Louis-Philippe Morin¹; Suma Ramagiri²; Mauro Aiello²; Johnny Cardenas²; Milton Furtado¹; Fabio Garofolo¹; ¹Algorithme Pharma Inc., Laval (Montreal), Quebec, Canada; ²AB SCIEX, Concord, ON
- MP 146 **Elimination of Selectivity and Quantification Issues during Ursodiol Regulated Bioanalysis by Using a High Resolution Quadrupole Time-of-Flight Mass Spectrometer;** Louis-Philippe Morin¹; Jean-Nicholas Mess¹; Suma Ramagiri²; Mauro Aiello²; Johnny Cardenas²; Milton Furtado¹; Fabio Garofolo¹; ¹Algorithme Pharma Inc., Laval (Montreal), Quebec, Canada; ²AB SCIEX, Concord, ON
- MP 147 **Hemolysis Effect on the Processed Reconstituted Stability of Morphine in Different Reconstitution Solutions;** Eugénie-Raphaëlle Bérubé; Milton Furtado; Fabio Garofolo; ¹Algorithme Pharma Inc., Laval (Montreal), Quebec, Canada
- MP 148 **Mobile Phase Decontamination of an Unexpected Isobaric Interference by Using Online Filtration in LC-MS/MS Regulated Bioanalysis;** Mathieu Lahaie; Milton Furtado; Fabio Garofolo; ¹Algorithme Pharma Inc., Laval (Montreal), Quebec, Canada
- MP 149 **Impact of the Injection Volume on Matrix Effect in LC-MS/MS Bioanalytical Methods;** Jean-Nicholas Mess; Mathieu Lahaie; Marie-Chantal Tremblay; Sylvain Latour; Milton Furtado; Fabio Garofolo; ¹Algorithme Pharma Inc., Laval (Montreal), Quebec, Canada
- MP 150 **Avoiding Major Issues in the Bioanalysis of Prasugrel by LC-MS/MS: Thorough Investigation of Incurred Samples and Reference Standard Materials;** Jean-Nicholas Mess; Milton Furtado; Fabio Garofolo; ¹Algorithme Pharma Inc., Laval (Montreal), Quebec, Canada
- MP 151 **Substantial Improvement in Dried Blood Spot (DBS) Technique by Using the "Pre-Cut DBS" Approach;** Nikolay Youhnovski; Catherine Dicaire; Milton Furtado; Fabio Garofolo; ¹Algorithme Pharma Inc., Laval (Montreal), Quebec, Canada

- MP 152 **Impact of Extraction Conditions on Matrix Effect and Recovery Efficiency by Supported Liquid Extraction in Quantitative LC-MS/MS;** Huachuan Cao¹; Hongliang Jiang²; Douglas Fast³; ¹Covance Lab, Madison, WI; ²Covance Laboratories Inc., Madison, WI; ³Covance Laboratories, Madison, WI
- MP 153 **Activation of Nrf2 as a Chemopreventive Strategy Against 4-ABP-induced Bladder Cancer;** Kristen L. Randall¹; Joseph D. Paonessa²; Yi Ding²; Dayana Argoti¹; Yuesheng Zhang²; Paul Vouros¹; ¹Northeastern University, Boston, MA; ²Roswell Park Cancer Institute, Buffalo, NY
- MP 154 **Quantitative Analysis of Phytoestrogens and Phytoestrogen Glucosides in Urine by Trap-and-Elute HPLC-ESI-MS;** Aaron Morgan; Samuel Yang; Kevin Schug; University of Texas at Arlington, Arlington, TX
- MP 155 **Validated LC-MS/MS Method and Pharmacokinetics Behavior of Alibendol in Human Plasma;** Sookie La¹; Hyun Jin Bae¹; Kyung Mi Kim¹; Kyung Hee Cho¹; Hee Joo Lee^{1,2}; ¹BioCore, Seoul, South Korea; ²Seoul Medical Science Institute, Seoul, Korea
- MP 156 **LC-MS-based Method for the Qualitative and Quantitative Analysis of Novel Drug Candidates for the Treatment of Type 2 Diabetes;** Min-Sun Kim; Sung-Hoon Ahn; Myung Ae Bae; KRICT, Daejeon, South Korea
- MP 157 **Population Studies of Endogenous Anabolic Steroids in Equine Plasma using Liquid Chromatography-tandem Mass Spectrometry;** Nola H. Yu; Emmie N. M. Ho; W. H. Kwok; April S. Y. Wong; Terence S. M. Wan; Racing Laboratory, The Hong Kong Jockey Club, Sha Tin, N.T., Hong Kong, China
- MP 158 **SIDA-UPLC-QuanToF-MS Quantitation of Resveratrol in Red Wines and Cross Validation;** Timo Stark; Nadine Wollmann; Thomas Hofmann; TU München, Chair of Food Chemistry and Molecular, Freising, Germany
- MP 159 **Development of an Improved LC MS/MS Method for the Quantitation of Acylglycines in Human Urine Using Differential Isotope Labeling;** Avalyn Lewis-Stanislaus; Kevin Guo; Liang Li; University of Alberta, Edmonton, Canada
- MP 160 **Determination of Ibandronate in Human Plasma by LC-ESI-MS/MS;** Jinyoung Kim; Inhee Cho; Haejong Jang; Seungwoo Kang; Youngshin Lee; International Scientific Standard, Chuncheon, South Korea
- MP 161 **Development and Validation of an On-Line Extraction LC-MS/MS Method for the Determination of Exemestane and 17-Hydroxyexemestane in Human Plasma;** Mohammed Abrar; Pratap Davuluri; Jennifer Dyer; John Allanson; Unilabs YBS, York, UK
- MP 162 **Impact of Hemolysis on the Quantitation of LC/MS/MS Assays: Case Studies of Mesalamine, Albuterol, and Asenapine in Human Plasma;** Spencer Carter; Weiwei Yuan; Yue Zhao; Brad Bessette; Min Meng; Tandem Labs, Salt Lake City, UT
- MP 163 **LC/MS/MS Quantification of Fluticasone Furoate in Human Plasma at the fg/mL Level;** Jennifer Keller¹; Joanne Mather²; Nancy Zheng¹; Zong-Ping Zhang¹; ¹PPDI, Middleton, WI; ²Waters Corporation, Milford, MA
- MP 164 **Quantification of Acylcarnitines in Biological Samples by Isotope Labeling and UHPLC-MS/MS;** Azeret Zuniga; Liang Li; University of Alberta, Edmonton, Canada
- MP 165 **High Speed Data Acquisition and Polarity Switching MS/MS Applied to Water-soluble Vitamin Analysis using a Novel Multi-mode ODS Separation;** Testuo Tanigawa; Toshikazu Minohata; Kiyomi Arakawa; Jun Watanabe; Shimadzu Corporation, Kyoto, Japan
- MP 166 **An Ultra Sensitive Method for the Determination of Albuterol in Human Plasma by LC/MS/MS;** Brad Bessette¹; Meng Min¹; Denny Liu²; Cojocar Laura²; Spencer Carter¹; ¹Tandem Labs - SLC, Salt Lake City, UT; ²Tandem Labs - NJ, West Trenton, NJ
- MP 167 **Determination of Norgestrel and 17-Deacetylnorgestimate in Human Plasma by Methoxyamine Hydrochloride Derivatization followed by Automated On-Line SPE with LC MS/MS;** David Lewiston; Bruce Babson; Gilbert Lam; David Beyerlein; MicroConstants Inc., San Diego, CA
- LC-MS: CHROMATOGRAPHY – SMALL MOLECULE, 168 - 200**
- MP 168 **Mitigation of Signal Suppression Caused by the Use of TFA in Liquid Chromatography Mobile Phases During LC-MS Analysis;** ChangChing Chan; Mark S. Bolgar; Dilusha Dalpathado; David K. Lloyd; Bristol-Myers Squibb, New Brunswick, NJ
- MP 169 **Analysis of Anions in Positive Electrospray Ionization Mode Using Di- and Tri- Cationic Ion-Pair Reagents;** Carmen T. Santasania¹; Daniel W. Armstrong²; Renee J. Soukup-Hein²; Jeffrey W. Remsburg²; Purnendu K. Dasgupta²; Zachary S. Breitbach²; Pritesh S. Sharma²; Tharanga Payagala²; Eranda Wanigasekara²; Junmin Huang²; ¹Supelco/Sigma-Aldrich, Bellefonte, PA; ²The University of Texas at Arlington, Arlington, TX
- MP 170 **LC-MS & LC-MS/MS Studies of Nonionic Surfactants;** Bryan Katzenmeyer; Chrys Wedemiotis; The University of Akron, Akron, OH
- MP 171 **Simultaneous Quantitation of Steroids in Rhesus Adrenal Cell Media by Capillary LC and Full Scan MS;** Michael Lassman; Rory Rohm; Ning Ren; Kathleen Sullivan; Mary Struthers; Thomas Roddy; Merck & Co, Rahway, NJ
- MP 172 **Novel Assay with Phospholipids Column Trapping and Switching Valve System for the Determination of Carboplatin in Human Plasma by LC/MS-MS;** Yifei Liu; Roger Demers; Daria Wentzel; Erika Hess; Laura Cojocar; Tandem Labs, West Trenton, NJ
- MP 173 **LC/ESI-MS/MS Method for Focusing Metabolome of Bile Acid Conjugates;** Masamitsu Maekawa¹; Masaru Mori¹; Hiroyuki Suzuki¹; Takashi Iida²; Miki Shimada¹; Nariyasu Mano¹; ¹Tohoku University Hospital, Sendai, Japan; ²Nihon University, Tokyo, Japan
- MP 174 **Development of a Column-Based High-Throughput Assay for Assessment of Small Molecule Binding to Alpha-1-Acid Glycoprotein Using LC/MS;** Yu Tian; Genfu Chen; Baoliang Cui; John Maull; Younghae Kim; Brian Bettencourt; Heather Blanchette; Roderic Cole; Abbott Laboratories, Worcester, MA

- MP 175 **An LCMS Method to Simultaneously Measure an Investigational Compound and Urea, an Endogenous Dilution Marker, in Bronchoalveolar Lavage and Plasma;** Kelly Wang; Eugene J. Eisenberg; Jaclyn Hayes; Jianhong Wang; Gerry Rhodes; *Gilead Sciences, Inc., Foster City, CA*
- MP 176 **Method Development and Validation of Letrozole in Human Plasma by LC-MS/MS;** Young Rim Jung; *Bio-Medieng, Seongnam-Si, South Korea*
- MP 177 **Pharmacokinetic Characteristics of Limaprost in the Healthy Korean Volunteers by LC-MS/MS;** Young Rim Jung; Ji-Young Lee; *Bio-Medieng, Seongnam-Si, South Korea*
- MP 178 **Determination of Crenolanib (CP-868,596) in Human Plasma and Serum by Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry (LC-ESI-MS/MS);** Feng Bai¹; Jennifer Johnson¹; Mohamed Elmeliogly^{1,2}; Abhihit Ramachandran³; Clinton Stewart^{1,2}; ¹St. Jude Children's Research Hospital, Memphis, TN; ²University of Tennessee, Memphis, TN; ³AROG Pharmaceuticals, Dallas, TX
- MP 179 **Detection and Identification of Components from Extracts of Cornus Officinalis by Liquid Chromatography Hybrid Ion Trap Time-of-Flight Mass Spectrometry;** Jintong Yao¹; Gang Cao²; Yuki Hashi¹; ¹Shimadzu Global COE, Shanghai, China; ²Zhejiang Chinese Medical University, Hangzhou, China
- MP 180 **A New Method for Simultaneous Determination of Eight Adulterants in Slimming Functional Foods by HPLC-ESI-MS/MS;** Ying Shi¹; Bo Gao²; Chengjun Sun¹; Aimin Sun²; ¹West China School of Public Health, Sichuan Univ, Chengdu, China; ²Analytical & Testing Center, Sichuan University, Chengdu, China
- MP 181 **A Sensitive LC/MS-MS Method for the Quantification of Telmisartan in Human Plasma;** Srividya Kailasam; *Agilent Technologies (India) Pvt. Ltd., Bangalore, India*
- MP 182 **Determination, Characterization and Stability Studies of Pigments from Bougainvillea spp;** Rashi Kochhar; *Shimadzu, Mumbai, INDIA*
- MP 183 **Is Your LC separation Specific Enough for Herb Extracts Quantification?--Accurate LC/LC-MS/MS Quantification of 4 Polyphenolic Isomers;** Xiaochuan Li¹; Kim B. Plath¹; Uwe Christians^{1,3}; Isaac Cohen²; Yan Ling Zhang¹; ¹BioNovo, Aurora, CO; ²BioNovo Inc., Emeryville, CA; ³University of Colorado HSC, Denver, CO
- MP 184 **Identifying Alkamides of Echinacea by FT-ICR Electrospray Ionization;** Ann Perera^{1,2}; Ludmila Rizshsky³; Basil J. Nikolau^{1,3}; ¹W. M. Keck Metabolomics Research Laboratory, Ames, IA; ²The Office of Biotechnology, Iowa State University, Ames, IA; ³Dept of Biochem Biophysics and Molecular Bio, Ames, IA
- MP 185 **LC-MS/MS-MRM of Organic Residues in Archaeological Ceramics to Corroborate the Presence of Wine;** Hans Barnard¹; Alek N. Dooley²; Kym F. Faull¹; ¹UCLA, Los Angeles, CA; ²Integrated Gulf Biosystems, Cairo, Egypt
- MP 186 **Study of Abrine as a Chemical Marker from Plants of Indian Origin using LC-MS/MS;** Shruti Raju; *Shimadzu, Mumbai, India*
- MP 187 **Immobilized Enzyme Reactor Screening of Complex Mixtures to Identify Protein-Binding Ligands Using Tandem Mass Spectrometry ;** Erica Forsberg; *McMaster University, Hamilton, Canada*
- MP 188 **Meet the Challenge of HPLC Carryover: A Systemic Case Study;** Lan Gao; *Merck, Rahway, NJ*
- MP 189 **Reduction of HPLC Valve and Injector Carryover by Chemical Oxidation of Analyte with Sodium Hypochlorite;** Barry Lutzke; Bradley L. Ackermann; *Eli Lilly & Company, Indianapolis, IN*
- MP 190 **Rapid, Simultaneous Screening of 38 Benzodiazepines and Related Compounds in Biological Fluids by LC/MS/MS using a Core-shell C18 Column;** Liming Peng; Tivadar Farkas; *Phenomenex Inc., Torrance, CA*
- MP 191 **Use of Superficially Porous Columns for Walk-up LC-MS Synthetic Analysis;** Joachim Azzi; Kachicholu Agu; Stephen Johnston; *Broad Institute, Cambridge, MA*
- MP 192 **Evaluation of PEG-bonded Stationary Phase for Rapid Elution of Phospholipids in LC-MS/MS Bioanalysis;** Donghui Bao; Michael Sofia; *Pharmasset, Princeton, NJ*
- MP 193 **Analysis of Synthetic Polymers using a pseudo 2D Chromatogram Integrated by LC-ESI-MS Data from Two Different Chromatographic Columns;** Hirofumi Hisatomi¹; Yukari Nishimoto²; Tomoyuki Ozawa³; Hideya Kawasaki¹; Koichi Ute⁴; Ryuichi Arakawa¹; ¹Kansai University, Osaka, Japan; ²The Nippon Synthetic Chemical Industry Co. Ltd., Osaka, Japan; ³Nissan Chemical Industries, Ltd., Chiba, Japan; ⁴The University of Tokushima, Tokushima, Japan
- MP 194 **Orthogonal Characterization of Premarin® Intravenous and its Degradation Products;** Hien Nguyen¹; Lauren Tedmon¹; James Simpkins²; Jane Wigginton³; David Maass³; Joshua Gatson³; Kevin Schug¹; ¹University of Texas at Arlington, Arlington, TX; ²University of North Texas Health Science Center, Fort Worth, TX; ³University of Texas at Southwestern, Dallas, TX
- MP 195 **Development of a Rapid and Sensitive Quantification Method for Adenosine and Guanosine by Ultra-High Performance Liquid Chromatography-Mass Spectrometry;** Yung-Hsiang Chen; Xiao Ding; Chialin Hsu; Flavius Martin; Brian Dean; *Genentech, Inc, South San Francisco, CA*
- MP 196 **Systematic evaluation of Acetone and Acetonitrile for Use in HILIC Coupled with ESI Mass Spectrometry of Basic Small Molecules;** Michael Jones^{1,2}; James Heaton²; Norman Smith²; Cristina Legido-Quigley²; ¹Waters Corporation, Milford, Ma, MA; ²King's College, London, UK
- MP 197 **Fast Quantitation of Biomarkers N-Acetylaspartate and N-Acetylaspartylglutamate in Mouse Brain Homogenates Using HILIC and Tandem Mass Spectrometry;** Monica Germann; Kendall Powell; *Tandem Labs, Durham, NC*

- MP 198 **Separation of Polar Molecules using a Stable Amino-bonded Phase HILIC Column;** Atis Chakrabarti; Roy Eksteen; *Tosoh Bioscienc LLC, King of Prussia, PA*
- MP 199 **Analyzing PETN by LC-MS, DUIS Mode;** Anna Marie Giambra; Geoffrey W. Brown; *Los Alamos National Laboratory, Los Alamos, NM*
- MP 200 **Homolog Analysis of Aged Pentaerythritol Tetranitrate by Liquid Chromatography – Mass Spectrometry;** Geoffrey W. Brown; Anna Marie Giambra; Mary M. Sandstrom; *Los Alamos National Laboratory, Los Alamos, NM*
- LC-MS: SAMPLE PREPARATION – PEPTIDES, 201 - 218**
- MP 201 **The Evaluation of Pressure-Assisted Enzymatic Digestion for the Optimal Digestion of Monoclonal Antibodies;** Yazen Jmeian; Eric Beil; Dariusz Janecki; Steven C. Pomerantz; Jennifer F. Nemeth; *Centocor R&D, a division of J&JPRD LLC, Radnor, PA*
- MP 202 **A Novel Method for Benchtop Digestion of Minute Protein Amounts by SpinTip Strong Cation Exchange Solid-phase Capture;** Vivian Nguyen¹; Andrew James¹; Brett Larsen¹; Olga Luft¹; Kelly Williton¹; Ruijin Tian¹; Monika Tuscholska¹; Jonathan So¹; Karen Colwill¹; Tony Pawson^{1,2}; ¹*Samuel Lunenfeld Research Institute, Toronto, Canada*; ²*University of Toronto, Toronto, Canada*
- MP 203 **Tandem MS Analysis of Peptides Proteolyzed on and Nebulized from a Surface Acoustic Wave Chip;** Lucas Monkkonen¹; Christophe Masselon^{1,2}; J. Scott Edgar¹; John D. Chapman¹; Scott Heron¹; Yue Huang¹; Sung-Hwan Yoon¹; David R. Goodlett¹; ¹*University of Washington - Medicinal Chemistry, Seattle, WA*; ²*CEA Grenoble, Grenoble, France*
- MP 204 **Evaluation of Efficiency of Microwave-assisted Proteolytic Digestion using Trypsin-Immobilized Magnetic Nanoparticles for Complex Proteome Samples;** Uma Kota¹; Christie Hunter²; Sean L. Seymour²; Mark Stolowitz¹; ¹*Stanford School of Medicine/Dept. of Radiology, Palo Alto, CA*; ²*AB SCIEX, Foster City, CA*
- MP 205 **Microwave-assisted GELFrEE-FASP: A Novel Integrated Platform for Large-scale Comprehensive Proteomics;** Yanbao Yu; Ling Xie; Harsha P Gunawardena; Jainab Khatun; Christopher Maier; Maarten Leerkes; Morgan Giddings; Xian Chen; *University of North Carolina-Chapel Hill, Chapel Hill, NC*
- MP 206 **Quantitative Assessment of a Proteomics Performance Standard;** Ashley Beasley; David Bunk; Paul Rudnick; Karen Phinney; *National Institute of Standards and Technology, Gaithersburg, MD*
- MP 207 **Something from Nothing: Utilizing Underdigested Tryptic Proteins and Peptides to Augment Membrane Protein Representation in *Ignicoccus hospitalis*-*Nanoarchaeum equitans* Co-culture;** Richard J. Giannone; Mircea Podar; Robert Hettich; *Oak Ridge National Laboratory, Oak Ridge, TN*
- MP 208 **Proteomic Quantification of Aging *Drosophila* Melanogaster by Stable Isotope Labeling (SILAC);** Ping Xu; Duc Duong; *Beijing Proteome Research Center, Changping District, China*
- MP 209 **The Development of Method for Estimation of Protein Digest Concentration Prior MS Analysis in Proteomics;** Jiri Dresler¹; Michaela Novakova¹; Martin Hubalek²; Libor Pisa¹; ¹*Central Military Health Institute, Prague, Czech Republic*; ²*Faculty of Military Health Sciences, Hradec Kralove, Czech Republic*
- MP 210 **A New High Throughput Microchromatography System for Protein Sample Prep;** Scott Fulton; *BioSystem Development, LLC, Madison, WI*
- MP 211 **Rapid Removal of Detergents using Online LC-MS for Intact Protein Characterization;** Jun Liu; Shuai Zuo; *Chempartner, Lafayette, CA*
- MP 212 **Evaluation of the Effect of Varying Cellular Lysis and Biomass Quantities on Fractionation Based Proteome Measurement of Microbial Isolates;** Ritin Sharma¹; Brian Dill²; Nathan VerBerkmoes²; Robert Hettich^{1,2}; ¹*UT/ORNL Graduate Program in Genome Sci. & Tech., Knoxville, TN*; ²*Oak Ridge National Laboratory, Oak Ridge, TN*
- MP 213 **A High Yield Method for the Removal of Detergents from Low Concentration Protein or Peptide Samples for MS Analysis;** Babu Antharavally; Michael Rosenblatt; Krishna Mallia; John C. Rogers; Paul Haney; *Thermo Fisher Scientific, Rockford, IL*
- MP 214 **Enhanced Protein Extraction for Microbial (meta)Proteomics of Defined Laboratory and Environmental Samples;** Xiaoxin Liu¹; Karuna Chourey²; Silke Nissen³; Abigail Green⁴; Shulei Sun⁵; Stephanie Connon⁴; Victoria Orphan⁴; Frank Loeffler³; Robert Hettich²; ¹*UT - ORNL Genome Science & Technology, Knoxville, TN*; ²*Oak Ridge National Lab, Oak Ridge, TN*; ³*University of Tennessee, Knoxville, TN*; ⁴*Caltech, Pasadena, CA*; ⁵*UCSD, San Diego, CA*
- MP 215 **IPG-IEF Fractionation of Peptides Prior to LC/MS: Off-gel Separation vs. In-gel Separation Followed by Peptide Elution;** Tom Berkelman; *Bio-Rad Laboratories, Hercules, CA*
- MP 216 **Compatibility of Gel Electrophoresis Stains with Electrospray – Tandem Mass Spectrometry;** Tim Wehr; Robin Baginski; Aran Paulus; Dennis Yee; *Bio-Rad Laboratories, Hercules, CA*
- MP 217 **Top-Down Analysis by LC-MS/MS (ETD) of Spatially-Resolved Tissue Section Extracts for Protein Identification in MALDI Imaging Experiments;** Kristie Lindsey Rose; David Anderson; Kevin L. Schey; *Vanderbilt University, Nashville, TN*
- MP 218 **Nano-flow Hydrophilic Interaction Liquid Chromatography (HILIC): Implications for Automated Gel-based Proteomics;** Dörte Hesse; Olaf Jahn; *Proteomics Group, MPI Experimental Medicine, Goettingen, Germany*
- LC-MS: CHROMATOGRAPHY – PEPTIDES, 219 - 232**
- MP 219 **Effect of Sample and Matrix Loading on Signal Response in LC-MS Bioanalysis;** Mark Woodruff¹; Ken Butchard¹; Ken Saunders²; Marc Elliott³; ¹*Fortis Technologies Ltd., Cheshire, UK*; ²*Pfizer, Sandwich, UK*; ³*Resolution Systems, Inc., Holland, MI*
- MP 220 **Use of Ammonium Formate to Modify Reversed-Phase LC-MS Analyses of Peptides and Tryptic Digests;** Barry Boyes^{1,2}; Darryl

- Johnson²; Stephanie Schuster¹; Jack Kirkland¹; Ron Orlando²; ¹Advanced Materials Technology Inc., Wilmington, DE; ²Complex Carbohydrate Research Center, UGA, Athens, GA
- MP 221 **Improving Nanobore Column Duty Cycle via Trap-Column Injection: Evaluating the Effect of Trap-Column Injection Flow Rate on Analytical Separation**; Carla Marshall-Waggett; Helena Svobodova; Gary Valaskovic; Amanda Berg; *New Objective, Inc., Woburn, MA*
- MP 222 **Evaluation of 150 µm ID Packed Tip Columns for Quantitative Peptide Analysis by LC-MS/MS**; Stanley Durand; Helena Svobodova; Amanda Berg; Gary Valaskovic; *New Objective, Inc., Woburn, MA*
- MP 223 **LC-MS Analysis of Biomolecules Applying ZIC-HILIC and RP Monolithic Silica Capillaries**; Stephan Altmaier¹; Jessica Wohlgemuth³; Wen Jiang²; Sven Andrecht¹; ¹Merck KGaA, Darmstadt, Germany; ²Merck SeQuant AB, Umea, Sweden; ³Abbott GmbH & Co. KG, Ludwigshafen, DE
- MP 224 **Optimizing Particle Size and Column Length, What is the Best Way to Utilize Nano UHPLC in Proteomics?**; Evert-Jan Sneekes; Karsten Dekker; Bjorn de Haan; Remco Swart; *Dionex Corporation, Amsterdam, Netherlands*
- MP 225 **Applying Online Nano-UHPLC to Proteomics**; Lasse G Falkenby¹; Ole Hoerning²; Christian Ravnsborg²; Jakob Bunkenborg¹; Jens S Andersen¹; ¹CEBI, University of Southern Denmark, Odense, Denmark; ²Thermo Fisher Scientific, Odense C, Denmark
- MP 226 **Coupling High Speed Separations with LC-MS/MS for Protein Identification**; Darryl Johnson¹; Barry Boyes²; Taylor Fields¹; Rachel Kopkin¹; Ron Orlando¹; ¹University of Georgia, Athens, GA; ²Advanced Materials Technology Inc., Wilmington, DE
- MP 227 **Two-dimensional Predictive Chromatography using Orthogonal Stationary Phases for Improved MS/MS-based Peptide Identification**; Eugene Moskovets¹; Anton Goloborodko²; Mikhail V. Gorshkov²; ¹MassTech, Inc, Columbia, MD; ²INEPCP, Moscow, Russian Federation
- MP 228 **A Database-derived Approach for Peptide Retention Prediction in Reversed-phase HPLC: N-terminal Amino Acid Addition/Deletion**; Janice Reimer; Marine Grigoryan; Vic Spicer; Oleg V. Krokhin; *University of Manitoba, Winnipeg, Canada*
- MP 229 **Total Retention Liquid Chromatography for Maximum Protein Sequence Coverage by Mass Spectrometry**; Mark E. Jennings II; Jolanta Krudysz-Amblo; Kenneth G. Mann; Saulius Butenas; Dwight E. Matthews; *University of Vermont, Burlington, VT*
- MP 230 **Differential Coverage of the Digestion-Resistant Peptidome Explored through Comparisons of Pentafluorophenylpropyl and C18 Stationary Phases using LC/TOF MS**; Siobhan Shay; A. Daniel Jones; *Michigan State University, East Lansing, MI*
- MP 231 **Increased Protein Identifications Using an Improved Microfluidic Chip**; Hongfeng Yin²; Jose-Angel Mora³; Christine Miller¹; Jose Meza¹; Norton Kitagawa¹; Lukas Trojer³; Wilfred Tang¹; Kirill Gromadski³; Kevin Killeen²; Patrick D. Perkins¹; ¹Agilent Technologies, Santa Clara, CA; ²Agilent Labs, Santa Clara, CA; ³Agilent Technologies GmbH, Waldbronn, Germany
- MP 232 **Long microcapillary Columns at Elevated Temperatures and Pressures for Proteomic and Metabolomic Applications**; Edward Franklin¹; Brenna Richardson^{2, 2}; J. Will Thompson²; M. Arthur Moseley²; James Jorgenson¹; ¹University of North Carolina at Chapel Hill, Chapel Hill, NC; ²Duke University, Durham, NC
- LIPIDS: IDENTIFICATION AND STRUCTURAL ANALYSIS, 233 - 253**
- MP 233 **Detection of TAG-Estolides from Plant and Fungal Oils with Matrix-Assisted Laser Desorption Ionization Time-Of-Flight Mass Spectrometry (MALDI-TOF-MS)**; Haixia Zhang; Doug J. Olson; Mark A. Smith; Randy W. Purves; *NRC-PBI, Saskatoon, SK Canada*
- MP 234 **Characterizing Lipid A and its Modifications by 193 nm UVPD**; James Madsen; Thomas Cullen; Jessica Hankins; M. Stephen Trent; Jennifer Brodbelt; *University of Texas Austin, Austin, TX*
- MP 235 **Structure Characterization of Glycosphingolipids in Human Milk by LTQ Orbitrap MS**; Ying Zhou¹; David S. Newburg²; Joseph Zaia¹; Catherine E. Costello¹; ¹Boston University School of Medicine, Boston, MA; ²Boston College, Boston, MA
- MP 236 **Identification of Phospholipids in Mouse Brain by using MALDI TOF-TOF**; Young Seung Park¹; Kwang Pyo Kim²; Young Hwan Kim^{1, 3}; ¹Korea Basic Science Institute, Cheongwon-gun, South Korea; ²Konkuk University, Seoul, South Korea; ³GRAST in Chungnam National University, Daejeon, South Korea
- MP 237 **Structure Determination of Complex Plant Glycosphingolipids by Tandem Mass Spectrometry**; Jean-Marie Schmitter; Corinne Buré; Jean-Luc Cacas; Fen Wang; Sébastien Mongrand; *University of Bordeaux, Bordeaux, France*
- MP 238 **Collisionally Induced Decomposition of Hydroperoxy Cholesteryl Ester Ammonium Adducts**; Patrick Hutchins; Robert C. Murphy; *Univ of Colorado Den, Aurora, CO*
- MP 239 **Characterization and Identification of Long-Chain and Short-Chain Phospholipid Oxidation Products by MALDI-MSⁿ**; Whitney L. Stutts¹; Kerolyn S. Valente²; Timothy J. Garrett³; Paolo Di Mascio²; Richard A. Yost¹; ¹Department of Chemistry, University of Florida, Gainesville, FL; ²Department of Biochemistry, University of São Paulo, São Paulo, Brazil; ³College of Medicine, University of Florida, Gainesville, FL
- MP 240 **Structural Analysis of Complex Lipids using MALDI-TOF-TOF Tandem MS with High Precursor-ion Selectivity**; Ayumi Kubo¹; Yoshiyuki Itoh¹; Masaaki Ubukata²; Masahiro Hashimoto¹; Jun Tamura¹; Jyun Onodera¹; Robert A. DiPasquale²; ¹JEOL Ltd., Tokyo, Japan; ²JEOL USA Inc., Boston, MA
- MP 241 **Biosynthesis of cysteinyl-containing 14,15-hepoxilins through the 15-lipoxygenase-1 Pathway in Human Cells**; Åsa Brunnström¹; Mats Hamberg²; William J. Griffiths³; Hans-Erik Claesson¹; ¹Department of Medicine, Karolinska

- MP 242 *Institutet, Stockholm, Sweden; ²MBB, Karolinska Institutet, Stockholm, Sweden; ³Institute of Mass Spectrometry, Swansea University, Swansea, UK*
Mass Spectrometric Characterization of Mannosylerythritol Lipid (MEL) Biosurfactants Produced by Biosynthesis Based on Feedstock Sources from Agro-food Industry; Filip Lemiere¹; Mathias Onghena²; Yolanda Pico³; Frank Sobott¹; Adrian Covaci⁴; Marc Wijnants²; ¹Center for Proteomics, University of Antwerp, Antwerp, Belgium; ²Karel de Grote University College, Antwerp, Belgium; ³University of Valencia, Valencia, Spain; ⁴Toxicological Center, University of Antwerp, Antwerp, Belgium
- MP 243 **Radical Directed Dissociation for Lipid Structural Identification;** Huong Pham Thu¹; Tony Ly²; Adam J Trevitt³; Todd W Mitchell³; Stephen J Blanksby³; ¹School of Chemistry, University of Wollongong, Wollongong, Australia; ²Wellcome Trust Centre for Gene Regulation and Expr, Dundee, UK; ³University of Wollongong, Wollongong, Australia
- MP 244 **Development of Workflows Towards Combining Online LC, OzID and CID for Structural Elucidation of Phospholipid Isomers;** Rachel Kozlowski; Todd W Mitchell; Stephen J Blanksby; University of Wollongong, Wollongong, Australia
- MP 245 **Localization of Double Bonds in Fatty Acids Utilizing Acetonitrile-Related Adducts Generated in the APCI Source;** Vladimir Vrkoslav; Michal Hoskovec; Josef Cvacka; Institute of Organic Chemistry and Biochemistry, Prague, Czech Republic
- MP 246 **Regioselective Anion Attachment and Regiospecific Decompositions of Bifunctional Steroids in Negative Ion Electrospray MS as Evidenced by Deuterium Labeling;** Richard B. Cole; Nalaka S. Rannulu; University of New Orleans, New Orleans, LA
- MP 247 **Identification of Lysoglycerophosphocholine in *Caenorhabditis elegans* using Reversed Phase Liquid Chromatography - Quadrupole Orthogonal Time-of-flight Mass Spectrometry;** Hyejung Park; Catherine E. Costello; Boston University School of Medicine, Boston, MA
- MP 248 **Towards Complete Structural Identification and Quantification of (O-acyl)- ω -hydroxy Fatty Acids in Human Tears, Meibum and Contact Lens Deposits;** Simon H.J. Brown¹; Jennifer T. Saville¹; Zhenjun Zhao^{2,3}; Mark D.P. Wilcox^{2,3}; Stephen J. Blanksby¹; Todd W. Mitchell⁴; ¹School of Chemistry, University of Wollongong, Wollongong, Australia; ²Brian Holden Vision Institute, Sydney, Australia; ³School of Optometry and Vision Science, UNSW, Sydney, Australia; ⁴School of Health Science, University of Wollongong, Wollongong, Australia
- MP 249 **Cross Correlation Score Aids Objective Lipid A Structure Assignment;** Ying Sonia Ting¹; Robert K. Ernst²; David R. Goodlett¹; ¹University of Washington, Seattle, WA; ²University of Maryland, Baltimore, MD
- MP 250 **Structural Analysis of Lipid A using Surface Acoustic Wave Nebulization (SAWN);** Sung Hwan Yoon¹; Yue Huang¹; Ying Sonia Ting¹; Christophe Masselon²; Scott Heron¹; John Edgar¹; Yanyan Li³; Robert K. Ernst³; David R. Goodlett¹; ¹University of Washington, Seattle, WA; ²CEA Grenoble, Grenoble, France; ³University of Maryland - Baltimore, Baltimore, MD
- MP 251 **Chiral LC-MS-MS Metabolomics of Bioactive Lipid Mediators: Investigation of Resolvin Biosynthesis;** Sungwhan Oh; Thad Vickery; Charles Serhan; Harvard Medical School, Boston, MA
- MP 252 **Lipid A Remodeling by N-acyltransferases in *Francisella tularensis* Elucidated by QIT-TOF and LTQ Orbitrap Hybrid Mass Spectrometers;** Scott A. Shaffer¹; John D. Leszyk¹; Yanyan Li²; Robert K. Ernst²; ¹University of Massachusetts Medical School, Worcester, MA; ²University of Maryland, Baltimore, MD
- MP 253 **Ambient Ozone and TLC-DESI-MS for Assigning Double Bond Positions Within Unsaturated Lipids;** Shane R Ellis; Marc in het Panhuis; Todd W Mitchell; Stephen J Blanksby; University of Wollongong, Wollongong, NSW, Australia
- LIPIDS: GENERAL, 254 - 273**
- MP 254 **Egg Yolk Phospholipid and Oil Triglyceride Degradation Studies using LC Coupled with UV-MS Detection. Impact on Lipid Emulsion Formulation;** Louis-Philippe Labranche; Anne Danion; Yves G. Leblanc; Alain Carrier; Sandoz, Boucherville, Canada
- MP 255 **MALDI Imaging Mass Spectrometry of Phospholipids in the Mouse Lung;** Karin A. Zemski-Berry¹; Bilan Li²; Susan D. Reynolds²; Robert M. Barkley¹; Miguel Gijon¹; Joseph A. Hankin¹; Peter M. Henson²; Robert C. Murphy¹; ¹University of Colorado Denver, Aurora, CO; ²National Jewish Health, Denver, CO
- MP 256 **A Sensitive Method for the Spatial Quantification of PI(4)P and PI(4,5)P₂ in Eukariotic Cells;** Federico Torta¹; Robin B Chan²; Lukas B Tanner¹; Markus R Wenk¹; Michael P Sheetz^{1,2}; ¹National University of Singapore, Singapore, Singapore; ²Columbia University, New York, NY
- MP 257 **Sample Preparation for Lipidomics: SPE-based Selective Lipids Extraction;** Pradeep Narayanaswamy¹; Edison¹; Federico Torta¹; Evelyn Goh²; Stephen Wong²; Mark Ritchie²; Markus R Wenk¹; ¹National University of Singapore, Singapore; ²Waters Pacific Pte Ltd, Singapore
- MP 258 **Multidimensional Lipid Analysis using Novel Workflows based on High Resolution Mass Spectrometry or High Peak Capacity Separation Techniques;** Markus Himmelsbach; Emmanuel Varesio; Gerard Hopfgartner; University of Geneva, LSMS, Geneva, Switzerland
- MP 259 **Shotgun Analysis of Phospholipids in Milk Samples by Hydrophilic Interaction Chromatography/Tandem Mass Spectrometry;** Marcus Mreyen; -, Duisburg, Germany
- MP 260 **Very Long-Chain Polyunsaturated Fatty Acids (VLC-PUFAs) Analysis by Liquid Chromatography-Mass Spectrometry;** Paolo Lecchi; Vinod Tarwade; Marcus Obeng; Bindi Dangi; Norman Salem, Jr; Krishna Raman; Martek Biosciences, Columbia, MD

- MP 261 **Cox-2 Mediated Formation of Heptanone-etheno DNA Adducts in Colon Cancer**; Nicole Speed; Stacy Gelhaus; Ian A. Blair; *University of Pennsylvania, Philadelphia, PA*
- MP 262 **Liquid Chromatography Mass Spectrometry Profiling and Quantification of *Drosophila melanogaster* Lipids**; Loubna Hammad¹; Brandon Cooper²; Nicholas Fisher²; Kristi Montooth²; Karty Jonathan¹; ¹*Department of Chemistry, Indiana University, Bloomington, IN*; ²*Department of Biology, Indiana University, Bloomington, IN*
- MP 263 **Characterizing the Lipid Loading Properties of Macrophages Using LC/MS for Detection of Cholesteryl Esters**; Joelle Onorato; Robert Langish; Samuel Hellings; Petia Shipkova; Peter Gargalovic; *Bristol-Myers Squibb, Princeton, NJ*
- MP 264 **The Search for Lipid Metabolites in the Endangered White Winged Wood Duck**; Sarah Stevens; Phil D'Amico; Tessiana Misko; Jennifer Pekar; Jody Modarelli; *Hiram College, Hiram, OH*
- MP 265 **Laserspray Ionization MSⁿ and High Spatial Resolution Tissue Imaging of Labile Gangliosides and Other Lipids**; Alicia L. Richards¹; Christopher B. Lietz¹; Yu Ren¹; James Wager-Miller²; Ken Mackie²; Sarah Trimpin¹; ¹*Wayne State University, Detroit, MI*; ²*Indiana University, Bloomington, IN*
- MP 266 **Investigation of Neuronal Phosphatidylserine Biosynthesis and Remodeling Affected by Chronic Ethanol Exposure Using HPLC-MS/MS**; Karl R. Kevala; Richard Hildreth; Hee-Yong Kim; *National Institutes of Health, Bethesda, MD*
- MP 267 **Imaging of Gecko Footprints: Lipids in the Contact Interface**; Chrys Wesdemiotis; Xiaopeng Li; Ping Yuan Hsu; Alyssa Stark; Liehui Ge; Peter Niewiarowski; Ali Dhinojwala; *The University of Akron, Akron, OH*
- MP 268 **Evaluation of Different Instrument Platforms for Shotgun Lipidomics of Plasma Samples**; Axel Besa¹; Matthias Glueckmann¹; Reinaldo Almeida²; Denise Sonntag³; Markus Langsdorf³; Michael Daxboeck³; ¹*AB SCIEX Germany GmbH, Darmstadt, Germany*; ²*Advion BioSciences Ltd., Harlow, Essex, UK*; ³*Biocrates Life Sciences AG, Innsbruck, Austria*
- MP 269 **Lipid Imaging by Liquid Extraction Surface Analyses of brain tissue sections using High Resolution Nano-ESI-MS and Nano-LC-MS**; Reinaldo Almeida^{1,2}; Johannes Vogt³; Hans Kristian Hannibal-Bach¹; Jan Baumgart³; Robert Nitsch³; Christer Ejlsing¹; ¹*Department of Biochemistry and Molecular Biology, Odense, Denmark*; ²*Advion BioSciences, Harlow, UK*; ³*Inst. for Microscopical Anatomy and Neurobiology, Mainz, Germany*
- MP 270 **Quantitative Analysis of 1-deoxysphinganine, N-acyl-1-deoxysphingosine and (dihydro)ceramides by Reverse-Phase-Liquid Chromatography, Electrospray-Ionization Tandem Mass Spectrometry**; Sibali Bandyopadhyay; M. Cameron Sullards; Alfred H. Merrill, Jr; *Georgia Institute of Technology, Atlanta, GA*
- MP 271 **HOCl-induced Phospholipid Oxidation Products as Biomarkers of Oxidative Stress in Inflammatory Liver Diseases**; Beate Fuchs; Celestina Schober; Gerrit Vortmeier; Jürgen Schiller; *University of Leipzig, Leipzig, Germany*
- MP 272 **Lipidomics Analysis of Oleaginous Microalgae**; Falicia Goh¹; Pornpimol Tiphthara¹; Amaury Cazenave-Gassiot²; Keith Alden¹; Rajoshi Ghosh¹; Shui Guanghou²; Yangkui Xue²; Markus Wenk²; Neil Clarke¹; ¹*Genome Institute of Singapore, Singapore*; ²*National University of Singapore, Singapore*
- MP 273 **Label-Free Detection of Lipophilic Analytes using Lipid Functionalized Gold Nanorods by MALDI-MS**; Roberto Gamez; David H. Russell; *Texas A&M University, College Station, TX*
- CARBOHYDRATES: CHARACTERIZATION, 274 - 293**
- MP 274 **Determining the Excretion Balance and Metabolic Fate of Human Milk Oligosaccharides**; Stephanie Gaerlan¹; M. Lorna De Leoz¹; Lauren Dimapasoc¹; Mark Underwood¹; Rudolf Grimm²; David Mills¹; Bruce German¹; Carlito Lebrilla¹; ¹*University of California, Davis, CA*; ²*Agilent Technologies, Santa Clara, CA*
- MP 275 **Rapid Determination of Human Milk Oligosaccharide Variation Between Lewis Blood Type and Seasonal Conditions**; Sarah M. Gutierrez¹; Shuai Wu¹; Nannan Tao¹; Angela Zivkovic¹; Andrew M. Prentice²; J. Bruce German¹; Carlito B. Lebrilla¹; ¹*University of California Davis, Davis, CA*; ²*London School of Hygiene & Tropical Medicine, London, UK*
- MP 276 **Assessing Gut Health of Infants by Quantitative Analysis of Fecal Oligosaccharide Signatures**; M. Lorna De Leoz¹; Karen Kalanetra¹; Stephanie Gaerlan¹; John Strum¹; Mark Underwood¹; Rudolf Grimm²; David Mills¹; Bruce German¹; Carlito Lebrilla¹; ¹*University of California, Davis, CA*; ²*Agilent Technologies, Santa Clara, CA*
- MP 277 **Rapid Structure Identification of Milk Oligosaccharides in Primates**; Shuai Wu¹; Nannan Tao¹; Jaehan Kim²; Hyun Joo An¹; Katie Hinde³; Michael Power⁴; Pascal Gagneux³; Rudolf Grimm^{6,7}; J. Bruce German⁷; Carlito Lebrilla¹; ¹*Department of Chemistry, UC Davis, Davis, CA*; ²*Department of Viticulture and Enology, UC Davis, Davis, CA*; ³*California Primate Research Center, UC Davis, Davis, CA*; ⁴*Smithsonian National Zoological Park, Washington DC, DC*; ⁵*Department of Cellular Molecular Medicine, UCSD, La Jolla, CA*; ⁶*Agilent Technologies, Santa Clara, CA*; ⁷*Department of Food Science Technology, UC Davis, Davis, CA*
- MP 278 **High Sensitivity Glycomic Analysis of Core 2 O-glycan-Deficient Mice**; Mohd Nazri Ismail^{1,3}; Erica L. Stone²; Stuart M Haslam³; Jamey D Marth⁴; Anne Dell³; ¹*Doping Control Centre, Universiti Sains Malaysia, Penang, Malaysia*; ²*University of California-San Diego, La Jolla, CA*; ³*Imperial College London, London, UK*; ⁴*University of California-Santa Barbara, Santa Barbara, CA*
- MP 279 **Structure Characterization of a Novel Heparan Sulfate-Derived Saccharide Found in the Murine Model of Mucopolysaccharidosis Type I**; Wei Wei¹; Milady R. Niñonuevo¹; Rebecca J. Holley²; Audrey Deligny³; H. Angharad O'Leary²; Brian W. Bigger²; Lena Kjellén³; Catherine L. R. Merry²; Julie A. Leary¹; ¹*University of California Davis, Davis, CA*; ²*The University of Manchester, Manchester, UK*; ³*Uppsala University, Uppsala, Sweden*

- MP 280 **Comparative Glycomics of Human and Bovine Milk Glycosaminoglycans**; Yang Mao¹; David Newburg²; Catherine E. Costello¹; Joseph Zaia¹; ¹Boston University School of Medicine, Boston, MA; ²Boston College, Chestnut Hill, MA
- MP 281 **LC-MS and LC-MS/MS Study of Heparan Sulfate Oligosaccharides Processed by Human Sulf-2**; Yu Huang; Xiaofeng Shi; Joseph Zaia; Boston University School of Medicine, Boston, MA
- MP 282 **Structural Analysis of Francisella tularensis Cell Surface Carbohydrates using High Resolution and Accuracy Mass Spectrometry**; Qi Wang; Xiaofeng Shi; Nancy Leymarie; Guillermo Madico; Jacqueline Sharon; Catherine E. Costello; Joseph Zaia; Boston University School of Medicine, Boston, MA
- MP 283 **Characterization of BRP 3 Erythropoietin N-Glycosylation Reveals Large Poly-N-acetyl Lactosamine Extensions**; Jonathan Bones^{1,2}; Stefan Mittermayr¹; Naoibh O'Donoghue²; Mark Hilliard²; Kieran Wynne³; Pauline M. Rudd²; Barry L. Karger¹; ¹Northeastern University, Boston, MA; ²NIBRT Dublin-Oxford Glycobiology Laboratory, Dublin, Ireland; ³UCD Conway Institute Proteome Research Centre, Dublin, Ireland
- MP 284 **A Novel Method for Relative Quantitation of N-glycans by Isotopic Labeling using H₂¹⁸O**; Shujuan Tao; Ron Orlando; University of Georgia, CCRC, Athens, GA
- MP 285 **The Development of Stable Isotope-Labeled Hydrazide Reagents for the Relative Quantification of N-linked Glycans in Spontaneous Ovarian Adenocarcinoma Model**; Hunter Walker; Januka Budhathoki-Uprety; Bruce Novak; David C. Muddiman; North Carolina State University, Raleigh, NC
- MP 286 **LC-ESI-MS and LC-MALDI MS of Permethylated Glycans derived from Esophageal Adenocarcinoma Human Blood Serum Samples**; Yunli Hu; Janie DeSantos-Garcia; Yehia Mechref; Texas Tech University, Lubbock, TX
- MP 287 **2-Deoxy-D-Glucose Inhibits N-glycosylation in Glioblastoma-Derived Cancer Stem Cells and Cancer Cells**; Xu Wang^{1,2}; Mark R. Emmett²; Yongjie Ji³; Izabela Fokt³; Stanislaw Skora³; Charles A. Conrad³; Waldemar Priebe³; Alan G. Marshall^{1,2}; ¹Florida State University, Tallahassee, FL; ²Nat'l High Magnetic Field Lab, Tallahassee, FL; ³University of Texas M.D. Anderson Cancer Center, Houston, TX
- MP 288 **Graphitised Carbon LC-MS/MS Identification of Cancer Specific Glycosylation of uPAR and Integrin β6 from Colorectal Cancer Cells**; Ruby Estrella¹; Alison Kan¹; David Cantor¹; Iveta Slapetova¹; Leon McQuade²; Mark Baker¹; ¹Macquarie University, Sydney, Australia; ²Australian Proteome Analysis Facility (APAF), Sydney, Australia
- MP 289 **Characterization of the N-linked Glycome from Ascites as an Early Indicator for Ovarian Cancer**; Francis Murphy; Michael A. Finan; Rodney P. Rocconi; Lewis K. Pannell; University of South AL, Mitchell Cancer Institute, Mobile, AL
- MP 290 **Negative ion MALDI CID and Ion Mobility Separations of N-glycans: Application to gp120 from the Human Immunodeficiency Virus**; David J. Harvey^{1,2}; Charlotte A. Scarff²; Christopher N. Scanlan¹; Max Crispin¹; Camille Bonomelli¹; Frank Sobott³; James H. Scrivens²; ¹Department of Biochemistry, University of Oxford, Oxford, UK; ²School of Life Sciences, University of Warwick, Coventry, UK; ³Center for Proteomics, University of Antwerp, Antwerp, Belgium
- MP 291 **Glycosylation Profiling of Therapeutically Active Glycoproteins: Identification of Glycans in Recombinant Factor IX using Directed MALDI-QIT-TOF-MSn and a Glycan Database**; Matthew Openshaw¹; Daniel Spencer²; Louise Royle²; Katharina Pock³; Omar Belgacem¹; ¹Shimadzu, Manchester, UK; ²Ludger Ltd, Oxford, UK; ³Octapharma Pharmazeutika Produktions GesmbH, Vienna, Austria
- MP 292 **Effect of Yeast on Floral Attractiveness - LC-MS/MS Quantitation of Sugars and Amino Acids in Floral Nectar**; Karolina M. Krasinska¹; Kabir G. Peay²; Yuen L. Tam¹; Tadashi Fukami²; Allis S. Chien¹; ¹SUMS, Stanford University, Stanford, CA; ²Department of Biology, Stanford University, Stanford, CA
- MP 293 **Identifying Enzyme Resistant Xylo-oligomers from Processing Switchgrass to Bioethanol**; Michael Bowman¹; Bruce Dien¹; Ronald Hector¹; Gautam Sarath²; Michael Cotta¹; ¹USDA, Agricultural Research Service, NCAUR, Peoria, IL; ²USDA, Agricultural Research Service, Lincoln, NE
- NUCLEIC ACIDS I, 294 - 311**
- MP 294 **A Comparison of HPLC and UPLC for the LC-MS/MS Analysis of Transfer Ribonucleic Acids (tRNAs)**; Collin Wetzel; Patrick A. Limbach; University of Cincinnati, Cincinnati, OH
- MP 295 **Maldi-TOF and Maldi-TOF/TOF Mass Spectrometry as a Method to Test RNA as Substrates of RNA Modifying Enzymes**; Vincent Guérineau¹; Amandine Guelorget²; Djemel Hamdane²; Béatrice Golinelli²; David Touboul¹; Alain Brunelle¹; ¹ICSN CNRS, Gif Sur Yvette, France; ²LEBS CNRS, Gif sur Yvette, France
- MP 296 **Development of Tissue Specific Isolation and Analysis Methods for Oligonucleotide Therapeutics and their Metabolites by LC/MS**; Michael Mcginley¹; Mark Hail²; Greg Scott¹; ¹Phenomenex, Torrance, CA; ²Novatia, Monmouth Junction, NJ
- MP 297 **Comparison of Methods for Purifying and Desalting Polymerase Chain Reaction Products Prior to Electrospray Ionization Mass Spectrometry**; Helene Manduzio²; Armelle Martelet²; Eric Ezan³; Swaroop Samant¹; Ashok Shukla¹; Francois Fenaille²; ¹Glygen Corp., Columbia, MD; ²CEA, iBiTec-S, SPI, Gif Sur Yvette, France; ³CEA, Gif Sur Yvette, France
- MP 298 **Femtomole Sensitivity RNA Analysis Based on Ion-pairing Reverse Phase nanoLC with Microfluidic Device**; Zoltan Timar¹; Travis Betz²; James A. Apffel³; Hongfeng Yin³; ¹Agilent Laboratories in Boulder, Boulder, CO; ²Agilent Nucleic Acid Solutions Division, Boulder, Co; ³Agilent Laboratories, Santa Clara, CA
- MP 299 **Screening Platform Consisting of Mass Calculator and UPLC-MS Method for Fast Characterization of Related Substances of Synthetic Oligonucleotide Drugs**; William Van Dongen; Proxy Laboratories, Leiden, Netherlands

- MP 300 **A New Method for Sequencing Ribonucleic Acids (RNAs) Using Isotope Labeling and LC-MS/MS;** Siwei Li; Patrick A. Limbach; *University of Cincinnati, Cincinnati, OH*
- MP 301 **The Implementation of High Throughput Screening of Modified Synthetic Oligonucleotides;** Julie Herniman; G. John Langley; *University of Southampton, Southampton, UK*
- MP 302 **A Nano-Chip-LC/MSⁿ Based Strategy for Characterization of Modified Nucleosides using Reduced Porous Graphitic Carbon as a Stationary Phase;** Anders M. B. Giessing¹; Lincoln Scott³; Finn Kirpekar²; ¹Univ. of Southern Denmark, Odense, Denmark; ²University of Southern Denmark, Odense M, Denmark; ³Cassia, LLC., San Diego, CA
- MP 303 **UPLC/NPC – ESI MSMS/ICPMS: A Tandem Tool for AS/P Confirmation in Bacterium DNA;** Hugues Preud'homme¹; Beatrice Lauga²; Robert Duran²; ¹LCABIE - UMR 5254 - CNRS - University of Pau, Pau, FRANCE; ²EEM - UMR 5254 - CNRS - University of Pau, Pau, FRANCE
- MP 304 **Quantification of 8-5'-cyclo-2'-deoxyguanosine and 8-5'-cyclo-2'-deoxyadenosine in calf thymus DNA treated with Fenton Reagents;** Candace Guerrero; Yinsheng Wang; *University of California, Riverside, CA*
- MP 305 **GenoMass: Software Tool for High-throughput Screening of the LC-MS/MS Data to Identify the Exact Location of Adducts in Modified Oligonucleotides;** Vaneet Sharma¹; James Glick¹; Qing Liao²; Paul Vouros¹; ¹Northeastern University, Boston, MA; ²Shenitech LLC, Woburn, MA
- MP 306 **Site-specific Quantification of Ribosomal RNA Post-transcriptionally Modified Nucleosides by Mass Spectrometry;** Rebecca Rohlf; Patrick A. Limbach; *University of Cincinnati, Cincinnati, OH*
- MP 307 **Quantification of DNA methylation and hydroxymethylation by LC-ESI-MS/MS-MRM;** Thuc Le¹; Kee-Pyo Kim²; Guoping Fan¹; Kym Faull¹; ¹UCLA, Los Angeles, CA; ²Baylor College of Medicine, Houston, TX
- MP 308 **Fast Impurity Profiling of Synthetic Oligonucleotides by Combined Application of Accurate Mass LC/TOF-MS and UV for Quantitative and Qualitative QA/QC;** Zoltan Timar^{1, 2, 3}; Moritz Wagner^{1, 2, 3}; Gordon Ross^{1, 2, 3}; Edgar Naegele^{1, 2, 3}; ¹Agilent Technologies, Waldbronn, GERMANY; ²Agilent Technologies, Boulder, CO; ³Agilent Technologies, Manchester, UK
- MP 309 **Mass Spectral Accuracy Applied to the Quantitative Analysis of Deamination Impurities in Oligonucleotide Therapeutics;** Steve Kan¹; Hongliang (Leo) Xu²; Yongdong Wang²; Claus Rentel¹; ¹ISIS Pharmaceuticals, Carlsbad, CA; ²Cerno Bioscience, Danbury, CT
- MP 310 **Quantification of a Phosphorothioate Oligonucleotide and its 3'-1 Metabolite from Rat Plasma by LC-MS/MS using a One-step SPE Sample Extraction;** Buyun Chen; Michael G. Bartlett; *University of Georgia, Athens, GA*
- MP 311 **Quantitative and Qualitative Analysis of a siRNA and its Degradation Products in Plasma by LC-MS/MS;** Tomonori Takami; Yukiko Nishida; Shohei Shioyama; Rieko Goto; *JCL Bioassay Corporation, Nishiwaki-Shi, JAPAN*
- METABOLOMICS: SAMPLE PREPARATION, 312 - 318**
- MP 312 **Sequential Sample Preparation Method for Wide-ranging Metabolome Analysis in Mouse Brain;** Khin Myint^{1, 3}; Frank Bernier²; Makoto Nakagawa²; Yashiya Oda^{1, 3}; ¹Eisai Inc., Andover, MA; ²Eisai Co., Ltd., Tsukuba, Japan; ³CREST, Japan Science and Technology, Saitama, Japan
- MP 313 **Comparison of Tissue Harvest Protocols for the Quantitation of Acylcarnitines in Mouse Heart and Liver by Mass Spectrometry;** Chris Petucci; Stella Rojas-Betancourt; Stephen Gardell; *Sanford-Burnham Medical Research Institute, Orlando, FL*
- MP 314 **Plasma Metabolites Degradation Study;** Alexander Raskind¹; Maureen Kachman¹; Steven M. Fischer²; Adrienne Tymiak³; Michael Reilly³; Jeremy S. Myers⁴; Yoji Ueda⁵; Hidenori Kamiguchi⁵; Yoshinori Satomi⁵; Takuhasi Ohga⁶; Tomoyashi Soga⁷; Chris Beecher¹; ¹University of Michigan, Ann Arbor, MI; ²Agilent Technologies, Santa Clara, CA; ³Bristol-Myers Squibb, Princeton, NJ; ⁴Pfizer Oncology Research Center, Pearl River, NY; ⁵Takeda, Osaka, JAPAN; ⁶Human Metabolome Technologies, Tsururoka, Japan; ⁷Keio University, Tsururoka, Japan
- MP 315 **Effective Extraction Method and Stable-Isotope Dansylation Labeling Combined with RPLC-FTMS for the Analysis of the Ginseng Root Metabolome;** Chiao-Li Tseng; Ruokun Zhou; Liang Li; *University of Alberta, Edmonton, Canada*
- MP 316 **Direct-infusion FT-ICR MS Method for the Analysis of nucleotides and their Labeled Isotopologues in Crude Polar Extracts;** Pawel Lorkiewicz; Richard Higashi; Andrew Lane; Teresa Fan; *University of Louisville, Louisville, KY*
- MP 317 **Cross-platform Comparison of Tissue Extraction Strategies for Comprehensive Metabolome Coverage;** Florian Geier; Elizabeth J Want; Lewis Kathy; Jake Bundy; Armand Leroi; *Imperial College London, London, UK*
- MP 318 **Simultaneous Molecular Analysis from Different Organelle in a Live Single Cell by Dual Tip Live Single-cell MS;** Yuki Yamamoto; Hajime Mizuno; Naohiro Tsuyama; Takanori Harada; Tsutomu Masujima; *Hiroshima Univ. Grad. Sch. Biomed. Sci, Hiroshima, JAPAN*
- METABOLOMICS: QUANTITATIVE ANALYSIS, 319 - 338**
- MP 319 **Comparison of Positive and Negative Ionization-Based Electrospray Methods for Analyzing Cellodextrins in Biomass Samples;** Bruce A. Tomkins; Timothy J. Tschaplinski; Gary J. Van Berkel; *Oak Ridge National Laboratory, Oak Ridge, TN*
- MP 320 **Rapid Profiling of Steviol Glycosides from Stevia rebaudiana using UHPLC/Tandem Mass Spectrometry in a Hybrid Linear Ion Trap Mass Analyzer;** Behnaz Shafii; Randy Beaudry; Ryan Warner; A. Daniel Jones; *Michigan State University, East Lansing, MI*
- MP 321 **Developing a High Throughput and Standardized LC-MS/MS Method for Steroid Quantification in Human Serum;** Hai Pham Tuan; Therese Koal; Diane Schmiederer; Cornelia

- Roehring; *BIOCRATES Life Sciences AG, Innsbruck, Austria*
- MP 322 **Quantitative Strategies in Targeted Metabolomics**; Mine G. Palazoglu; Sangeeta Kumari; Wan Ling Tan; Mimi Swe; Oliver Fiehn; *UC Davis, Davis, CA*
- MP 323 **Quantitative Metabolomics: The Quantitative Measurement of Redox Coupled Metabolites using Reverse Phase Ion-pairing LC-MS**; James Cox; Joel Pieper; Alex Coffman; *University of Utah, Salt Lake City, UT*
- MP 324 **Direct Determination of Urinary Metabolites in Rats Exposed to Toluene Diisocyanates (TDI) using Liquid Chromatography-Tandem Mass Spectrometry**; Jingyueh Jeng; Hui-Jung Yeh; Zhengyuan Shi; *Chia Nan University of Pharmacy & Science, Tainan, Taiwan*
- MP 325 **A Quantitative UPLC-MS/MS Method for Metabolites of the Isothiocyanates Erucin and Sulforaphane**; Ken Riedl¹; Besma Abbaoui¹; John Clarke²; Robin Ralston¹; Amir Mortazavi¹; Emily Ho²; Steven Clinton¹; Steven Schwartz¹; ¹The Ohio State University, Columbus, OH; ²Linus Pauling Institute, Oregon State University, Corvallis, OR
- MP 326 **Sugar Nucleotide Quantification Using Multiple Reaction Monitoring (MRM) LC-MS/MS**; Aldo Garcia; Yehia Mechref; *Texas Tech University, Lubbock, TX*
- MP 327 **A New, Single-Run Method for Water- and Fat-Soluble Vitamins Using UPLC-MS/MS Analysis**; Mary Szorik; April Scott; Mohamad Awada; *Thermo Fisher Scientific, North Logan, UT*
- MP 328 **Diagnostics and Progression Monitoring of Metabolic Syndrome and Diabetes Mellitus Type 2 using Targeted Metabolomics**; Ulrika Lundin¹; Alexander Dzien²; Markus Langsdorf¹; Dietmar Neuss¹; Klaus M Weinberger¹; ¹BIOCRATES Life Sciences AG, Innsbruck, Austria; ²Medicalcenter Innsbruck, Innsbruck, Austria
- MP 329 **Translational Research in Nephrology - Biomarker Discovery by Targeted Metabolomics**; Ulrika Lundin; Klaus M Weinberger; *BIOCRATES Life Sciences AG, Innsbruck, Austria*
- MP 330 **Cancer Cell Metabolomics from Cell Lines, In Vivo Tumor Tissue and Preserved Fixed Tissue**; Susanne Breitkopf¹; Xuemei Yang¹; Jason Locasale¹; Rami Rahal³; Min Yuan¹; Chin-Lee Wu²; Eric Wong¹; Dimitrios Spentzos¹; John M Asara¹; ¹Beth Israel Deaconess Medical Center, Boston, MA; ²Massachusetts General Hospital, Boston, MA; ³Harvard Medical School, Boston, MA
- MP 331 **Effects of Paroxetine, Disulfiram or Rifampin Administration on Gene Expression and in Vivo Activities of Six Specific Cytochrome P450s**; Nicolas Stewart; Nukui Tomoko; Shama Buch; Yvonne Cannon; Marjorie Romkes; Robert Branch; *University of Pittsburgh, Pittsburgh, PA*
- MP 332 **Metabolite Profiling and Dynamic ¹³C Metabolomics of Methane Assimilation Pathways in Methanotrophic Bacteria**; Song Yang; Martin Sadilek; Janet Bickford; Marina Kalyuzhnaya; Mary Lidstrom; *University of Washington, Seattle, WA*
- MP 333 **High Throughput Quantitative MALDI MS Analysis of Small Molecules and Metabolites**; Venkateswarlu Panchagnula; Ajeet Singh; Avinash Ghanate; Deepika Dhaware; Gayatri Phadke; Nivedita Bhattacharya; Dipali Kale; *National Chemical Laboratory, Pune, India*
- MP 334 **Sensitive and Specific Quantitation of 1 α ,25-Dihydroxy Vitamin D₃ and Analogs Using LC-MS/MS and Labeling Chemistry**; Subhakar (Subi) Dey; Brian Williamson; Sasi Pillai; Subhasish (Babu) Purkayastha; *AB SCIEX, Framingham, MA*
- MP 335 **Deuterium Labeling of Polyphenolic Compounds in Complex Mixtures for Improving their Identification and Quantification by Mass Spectrometry**; Mikel R. Roe; Jerry Cohen; Adrian D. Hegeman; *University of Minnesota, Saint Paul, MN*
- MP 336 **Isotope-labeled Differential Profiling of Amine-Containing Metabolites in Mesenchymal Stem Cells under Hypoxic Conditions**; Leanne B Ohlund; Véronique Plante; Hesna Belainine; Tze Chieh Shiao; Sébastien Proulx-Bonneau; Borhane Annabi; René Roy; Lekha Sleno; *UQAM, Montreal, Canada*
- MP 337 **A Quantitative Metabolomic Study on Transgenic Mice Urine Samples of Alzheimer's Disease by Dansylation Labeling and LC-FTICR-MS**; Jun Peng; Kevin Guo; Jianguo Xia; Jianjun Zhou; Jing Yang; David Westaway; David Wishart; Liang Li; *University of Alberta, Edmonton, Canada*
- MP 338 **A Novel Triplex Stable-Isotope Labeling Method for Quantitative Metabolome Analysis by LC-MS**; Ruokun Zhou; Kevin Guo; Liang Li; *University of Alberta, Edmonton, Canada*
- DIAGNOSTIC CLINICAL CHEMISTRY I, 339 - 357**
- MP 339 **Analysis of Glycosaminoglycans in CSF and Urine using Tandem Mass Spectrometry: Potential for Therapeutic Monitoring of Patients with Mucopolysaccharidoses**; Haoyue Zhang; *Duke University Pediatrics, Durham, NC*
- MP 340 **LC/MS/MS Determination of Monoamine Neurotransmitter Metabolites in CSF**; Denis Cyr¹; Rene Gagnon²; K Hyland³; R. Drouin^{1,2}; Bernard Echenne⁴; M T Berthier^{1,2}; ¹CHUS-Service de Génétique, Sherbrooke, QC; ²Centre de Recherche Clinique Etienne-Le Bel CHUS, Sherbrooke, QC, Canada; ³Medical Neurogenetic, Atlanta, GA; ⁴CHU, Montpellier, France
- MP 341 **Clinical Diagnosis of Erythropoietic Protoporphyria Using Tandem Mass Spectrometry**; John Choiniere; C. Ronald Scott; Michael Gelb; Frantisek Turecek; *University of Washington, Seattle, WA*
- MP 342 **Tandem Mass Spectrometry Assays of PPTI and TPPI Enzymes for the Clinical Diagnosis of Neuronal Ceroid Lipofuscinosis (NCL)**; Mariana Barcenas¹; Tatyana Marushchak¹; Frank Turecek¹; C. Ronald Scott²; Michael Gelb^{1,3}; ¹Department of Chemistry, University of Washington, Seattle, WA; ²Department of Pediatrics, University of Washington, Seattle, WA; ³Department of Biochemistry, UW, Seattle, WA
- MP 343 **Multiplexing of Enzyme Activity Assays in Dried Blood Spots Using Fast Liquid Chromatography: Application to Newborn Screening**; Zdenek Spacil¹; Susan Elliott²; Michael H. Gelb¹; C. Ronald Scott¹; Frantisek Turecek¹; ¹University of Washington, Seattle, WA;

- ²Washington State Department of Health, Shoreline, WA
- MP 344 **On-line Derivatization HPLC+HRGC-MS Multidimensional System for Characterization of Organic Acids and Amino Acids Profiles in Biological and Food Samples;** Nieves Sarrión¹; David Alonso¹; Roger Gibert¹; Josep M^a Gibert²; Ileana García²; ¹Konik-Tech, S.A., Sant Cugat Del Vallés, Spain; ²KONIK Instruments, Miami, FL
- MP 345 **Quantitation of Pipelicolic Acid in Human Plasma by Liquid Chromatography-Mass Spectrometry;** Katerina Sadilkova; Rhona Jack; Seattle Children's Hospital, Seattle, WA
- MP 346 **Stable Isotope Mass Tag Approach for Acylcarnitine Profiling by Tandem Mass Spectrometry;** John D. Sowell; Greenwood Genetic Center, Greenwood, SC
- MP 347 **Delta Aminolevulinic Acid Quantitation in Urine by LC-MS/MS;** Jean M Lacey; Mark J. Magera; Silvia Tortorelli; Mayo Clinic, Rochester, MN
- MP 348 **Development of Assays for the Detection of Mucopolysaccharidosis III types A, B, C and D by Tandem Mass Spectrometry;** Brian J. Wolfe; Tim Kim; C. Ronald Scott; Michael H. Gelb; Frantisek Turecek; University of Washington, Seattle, WA
- MP 349 **Selective, Accurate, and Precise Quantification of Acylcarnitines in Human Urine, Plasma, and Skeletal Muscle by HPLC-MS/MS;** Paul E. Minkler; Maria S.K. Stoll; Stephen T. Ingalls; Charles L. Hoppel; Case Western Reserve Univ., Cleveland, OH
- MP 350 **Analysis of 25-Hydroxy Vitamin D₂ and D₃ in Human Serum using UHPLC/SQ MS with Field-Free APCI Ion Source;** Sean Daugherty; Avinash Dalmia; Daniel Pentek; Perkinelmer, Shelton, CT
- MP 351 **Determination of Endogenous Steroids in Human Serum using a Triple Quadrupole Mass Spectrometer with Ion Funnel Technology in Positive/Negative Modes;** Yanan Yang; Andre Szczesniowski; Linda Cote; Agilent Technologies, Inc, Santa Clara, CA
- MP 352 **Quantitative analysis of Plasma 1 α ,25-Dihydroxyvitamin D by Liquid Chromatography-tandem Mass Spectrometry with Atmospheric Pressure Photo-ionization (APPI);** Xiang He; Glenn Damkroeger; Marta Kozak; ThermoFisher Scientific, San Jose, CA
- MP 353 **Impact of Sorbitol Addition on In-source Vitamin D Dehydration;** Eduard Rogatsky; Daniel Stein; Albert Einstein College of Medicine, Bronx, NY
- MP 354 **Direct Speciation of Estrogen Glucuronide and Sulfate Conjugates in Human Urine by Capillary Electrophoresis-Time of Flight-Mass Spectrometry;** Naomi Janson¹; Dawn Stickle²; Julie Marr²; Philip Britz-McKibbin¹; ¹McMaster University, Hamilton, ON; ²Agilent Technologies, Santa Clara, CA
- MP 355 **Comprehensive Thiol Speciation for Assessment of the Redox Status of Chronic Lymphocytic Leukemia Cells by Capillary Electrophoresis-Time of Flight-Mass Spectrometry;** Karen P. Lam¹; Julie Marr²; David E. Spaner³; Dawn Stickle²; Philip Britz-McKibbin¹; ¹McMaster University, Hamilton, ON,;
- ²Agilent Technologies, Santa Clara, CA;
- ³Sunnybrook Research Institute, Toronto, ON
- MP 356 **Development of a Method for the Analysis of 3-epi-25-OH-Vitamin D and 25-OH-Vitamin D on a 4000 QTRAP® LC/MS/MS System;** Daniel Leigh^{1,2}; Michael Jarvis^{1,2}; ¹AB SCIEX, Warrington, UK; ²AB SCIEX, Foster City, Ca
- MP 357 **Determination of Serum 'Free' Testosterone in Women and Children using Stable-isotope Dilution Liquid Chromatography-Tandem Mass Spectrometry;** Xueheng Zhao; Wujuan Zhang; Susan Sherritt; Kenneth D. R. Setchell; CCHMC, Mason, OH
- ELEMENTAL ANALYSIS, 358 - 361**
- MP 358 **Comparing the Capability of Collision/Reaction Cell Quadrupole and Sector Field Inductively Coupled Plasma Mass Spectrometers for ¹³⁷Cs/¹³⁷Ba Separation;** Khalid A. Al-Saad; Mohamed A. Amr; Qatar University, Doha, QATAR
- MP 359 **Purity Analysis of dNCP Standard Solutions Using Multiple LC-ICP/MS Methods;** Yong-Hyeon Yim¹; Hyun-Seok Lee^{1,2}; Kyeong-Seok Lee¹; In-chul Yang¹; Myung Sub Han¹; Sang-Royul Park¹; Yong-Moon Lee²; Euijin Hwang¹; ¹KRISS, Daejeon, South Korea; ²College of pharmacy, Chungbuk National University,, Cheongju, Korea
- MP 360 **High-resolution Mass Spectrometry for the Study of Metal Species: Tandem MS and Isotope Ratios for Structural Elucidation;** Duane A. Rogers; Robert E. Morris; Kevin J. Johnson; US Naval Research Laboratory, Washington, DC
- MP 361 **Potential Application of Capillary Electrophoresis-inductively Coupled Plasma-Mass Spectrometry for Metal Analysis in Nanoparticles and Environmental Samples;** Jerry Tso; Alice M. Bergmann; Diana S. Aga; University at Buffalo, SUNY, Buffalo, NY
- ENVIRONMENTAL ANALYSIS: GENERAL, 362 - 387**
- MP 362 **Analysis of Volatile Metabolites Emitted by Soil Fungi Using Head Space Solid-Phase Microextraction GC/MS and Ion Mobility Spectrometry;** Takae Takeuchi^{1,2}; Tomoko Kimura¹; Haruna Tanaka¹; Sachiyo Kaneko¹; Shouko Ichii¹; Masato Kiuchi²; Takahito Suzuki¹; ¹Nara Women's University, Nara, JAPAN; ²AIST, Ikeda, Japan
- MP 363 **Preliminary Fingerprinting of Athabasca Oil Sands Acids in Environmental Samples Using FTICR MS Electrospray Ionization;** John Headley¹; Mark P. Barrow²; Kerry M. Peru¹; Brian Fahlman¹; Mark Hewitt³; Richard Frank³; ¹Environment Canada, Saskatoon, Canada; ²University of Warwick, Coventry, UK; ³Environment Canada, NWRI, Burlington, Canada
- MP 364 **A Highly Sensitive and Specific GC-PCI-MS/MS Method for the Analysis of Perfluorinated Alkyl Compounds;** Anthony Macherone¹; Shoji F Nakayama²; Kidus Tadele²; Marc A Mills²; ¹Agilent Technologies, Wilmington, DE; ²U.S. Environmental Protection Agency, Cincinnati, OH
- MP 365 **Analysis of Organic Aerosols Using Thermal Desorption Glow Discharge Ion Trap Mass Spectrometry;** Michael Tolocka; Piriya

- Wongkongkathep; Sandra Spencer; Gary L. Glish; *University of North Carolina, Chapel Hill, NC*
- MP 366 **Molecular Processes in an Alternating Current Plasma Driven Air Purifier**; Stefan Schmid; Renato Zenobi; *ETH Zurich, Zurich, Switzerland*
- MP 367 **A Simple GC-MS Approach to Define a Toxicity Emission Rate (TER) for Complex Odour Sources Emissions**; Enrico Davoli¹; Giancarlo Bianchi¹; Laura Capelli²; Selena Sironi²; Renato Del Rosso²; Paolo Centola²; Caterina Austeri³; ¹Mario Negri Institute, Milano, Italy; ²Politecnico di Milano, Milano, Italy; ³ARPA Umbria, Terni, Italy
- MP 368 **Use of HRGC/MS to Measure PCBs, PBDEs, and OCPs in Fish from the North Pacific Gyre: Effects from Microplastics?**; Suhash Harwani¹; June-Soo Park¹; Thelma Y. Garcia¹; Margy Gassel²; Andrea Neal³; Bruce Labelle¹; Myrto Petreas¹; ¹Environmental Chemistry Laboratory, DTSC, Cal/EPA, Berkeley, CA; ²OEHHA, Cal/EPA, Oakland, CA; ³Jean-Michel Cousteau's Ocean Futures Society, Santa Barbara, CA
- MP 369 **Analysis of 209 PCB Congeners by GC Tandem Mass Spectrometry**; Collin Just¹; Keri Hornbuckle¹; Dingfei Hu¹; Rachel Marek¹; Anthony Macherone²; ¹University of Iowa, Iowa City, IA; ²Agilent Technologies, Wilmington, DE
- MP 370 **Polychlorinated Biphenyls (PCB's) Analysis using Miniaturized High-resolution Time-of-Flight Mass Spectrometer "MULTUM-S II"**; Shuichi Shimma¹; Shinichi Miki²; Michisato Toyoda¹; ¹Osaka University, Toyonaka, Japan; ²MSI Tokyo, Inc., Chofu, Japan
- MP 371 **Development and Validation of an UHPLC-MSMS Method for Determination of PFCs in Water Samples: Comparison of Two Validation Studies**; Meng Yu; Chuck Neslund; Lancaster Labs, Lancaster, PA
- MP 372 **Identification Dioctyl Sulfosuccinate Sodium Salt (DOSS) Degradates in Ocean Waters by Tandem Mass Spectrometry**; Sudha Rani Batchu; Cesar E Ramirez; Piero R Gardinali; *FIU, North Miami, FL*
- MP 373 **Simultaneously Determination the Anionic Surfactant DOSS and its Degradates in Multimedia Samples by Liquid Chromatography Tandem Mass Spectrometry**; Jian Wang; Cesar E Ramirez; Sudha Rani Batchu; Piero Gardinali; *Florida International University, North Miami Beach, FL*
- MP 374 **Simultaneous Determination of Corexit EC9500A & EC9527A Components in Seawater and Crude Oil by Liquid Chromatography/Tandem Mass Spectrometry**; Cesar E Ramirez; Sudha Rani Batchu; Piero R Gardinali; *FIU, North Miami Beach, FL*
- MP 375 **Characterization of Subsurface Dissolved Gases Near the Deepwater Horizon site using in situ Membrane Introduction Mass Spectrometry**; Tim Short; Ryan Bell; Strawn Toler; *SRI International, St Petersburg, FL*
- MP 376 **Applications of Field-mobile Purge and Trap GC/MS for Onsite Water Analysis**; Cynthia Liu; Mitch Wells; Dennis Barket; *FLIR Mass Spectrometry (Griffin), West Lafayette, IN*
- MP 377 **The Effect of Drywall on Arsenic Leaching and Speciation in Construction and Demolition Debris Landfills**; Jianye Zhang; Timothy Townsend; *University of Florida, Gainesville, FL*
- MP 378 **Ultrasound-assisted Dispersive Liquid-liquid Microextraction Combined with LC-APPI-MS/MS for Fast Determination of Aqueous Fullerenes in Water Samples**; Hsin-Chang Chen; Wang-Hsien Ding; *National Central University, Jhongli, Taiwan*
- MP 379 **Injection-port Derivatization Gas Chromatography - Tandem Mass Spectrometry for the Determination of Benzophenone-type UV Filters in Aqueous Samples**; Wang-Hsien Ding; *National Central University, Chung-Li, Taiwan*
- MP 380 **Cyanotoxins Analysis by TLC-MALDI-TOF-MS**; Humberto MS Milagre; Guilherme AM Caes; Janine M Bellincanta; Marina F Giubbina; Cintia DF Milagre; *UNESP, Rio Claro, Brazil*
- MP 381 **Sensitive and Fast Screening for Explosives: Utilization of On-line Preconcentration and High Resolution Mass Spectrometry**; Josef Ruzicka¹; Mark L. Dreyer²; Kevin J. Mchale¹; ¹Thermo Fisher Scientific, Somerset, NJ; ²Thermo Fisher Scientific, San Jose, CA
- MP 382 **Chloramine Detection by a Membrane Inlet Associated to a Transportable FTICR**; Essyllt Louarn; Abdoul Monem Masri; Joel Lemaire; Hélène Mestdag; *LCP CNRS - Université Paris Sud 11, Orsay, France*
- MP 383 **Differential Interactions of Bromo-Methyl-Benzoquinones with Oligonucleotides**; Janna Anichina¹; Yuli Zhao²; Andre Schreiber¹; Steve E. Hruddy²; Xing-Fang Li²; ¹AB SCIEX, Concord, Canada; ²University of Alberta, Edmonton, Canada
- MP 384 **Formation and Occurrence of New Drinking Water Disinfection Byproducts - Halobenzoquinones**; Yuli Zhao; Janna Anichina; Jessica M. Boyd; Wei Wang; Xing-Fang Li; *University of Alberta, Edmonton, AB CANADA*
- MP 385 **Method and Software Configuration for Automated Target and Non-target Screening of Organic Contaminants in Environmental Samples using the Orbitrap**; Heinz Singer; Martin Loos; Matthias Ruff; Philipp Longree; Juliane Hollender; *Eawag, Duebendorf, Switzerland*
- MP 386 **A Highly Sensitive LC-MS-MS Analysis of Persistent Artificial Sweeteners in Coastal Water from Northern Japan to Sakhalin**; Shigeru Suzuki; *Chubu University, Kasugai, Japan*
- MP 387 **Condensed Phase Membrane Introduction Mass Spectrometry (CP-MIMS) for Direct, Trace, On-Line Monitoring of Biomolecules and Environmental Contaminants in Complex Samples**; Kyle D. Duncan^{1,3}; Erin P. B. McCauley²; Erik T. Krogh^{2,3}; Christopher G. Gill^{2,3}; ¹University of Victoria, Victoria, BC, Canada; ²Vancouver Island University, Nanaimo, BC, Canada; ³Appl. Env. Res. Labs.(AERL), Nanaimo, BC, Canada
- HOMELAND SECURITY, 388 - 401**
- MP 388 **Identification of Bacteria-based Biological Warfare Agents using MALDI-TOF MS Fingerprinting**; Thomas Elssner¹; Markus Kostrzewa¹; Thomas Maier¹; Amanda Bulman²; Michal Drevinek³; ¹Bruker Daltonik GmbH, Leipzig/Bremen, Germany; ²Bruker Daltonics Inc., Billerica, MA; ³Sujchbo, Milín, Czech Republic

- MP 389 **Identification of Biomarkers for Multiplex Proteomic Detection of *Bacillus Anthracis* Spores;** Jérôme Chenau¹; Francois Fenaille¹; Eric Ezan¹; Nathalie Morel¹; Patricia Lamourette¹; Pierre Goossens²; Francois Becher¹; ¹CEA, iBiTec-S, SPI, Gif Sur Yvette, France; ²Institut Pasteur - URA 2172 CNRS, Paris, France
- MP 390 **Identification and Quantification of Ricin in Biomedical Samples by Immunoaffinity Enrichment and LC-ESI-MS/MS;** Xiaoxi Ma; Jijun Tang; Jia Chen; Qin Liu; Lei Guo; Chunzheng Li; Hua Li; Jianwei Xie; *Beijing Institute of Pharmacology and Toxicology, Beijing, China*
- MP 391 **Detection, Characterization and Quantification of Botulinum Neurotoxins in Human Clinical Specimens;** John R. Barr; Suzanne Kalb; Dongxia Wang; Bryan Parks; Jakub Baudys; *CDC, Atlanta, GA*
- MP 392 **Use of Multiple endoproteases in Sequential In-gel Digestions Improves Sequence Coverage of Botulinum Neurotoxins for Confident Subtyping by Mass Spectrometry;** Dongxia Wang; Jakub Baudys; Jon Rees; Suzanne Kalb; John R. Barr; *Centers of Disease Control and Prevention (CDC), Atlanta, GA*
- MP 393 **Quantitative Proteomics of Combinational Therapies for the Mitigation of Neovascularization of the Cornea Following Exposure to Sulfur Mustard;** Mitchell Meade¹; Pavel Shiyonov¹; Michael Babin²; John Schlager¹; ¹AFRL, Dayton, OH; ²Battelle Memorial Biomedical Research Center, Columbus, OH
- MP 394 **Forensic Attribution of a Chemical Agent Simulant Using GC-IRMS;** Aaron J. Frank; Keith James; Bobby N. Brewer; Lauren C. Eiter; Andrew J. Savage; *Battelle, Columbus, OH*
- MP 395 **Field Test Evaluation of a Walkthrough Portal Detector of Improvised Explosive Devices at a Train Station;** Shun Kumano; Masuyuki Sugiyama; Yasuaki Takada; Hisashi Nagano; Yasutaka Suzuki; Eri Nakajima; Hideki Hasegawa; Yuichiro Hashimoto; Minoru Sakairi; *Hitachi, Ltd, Central Research Lab, Kokubunji, Tokyo, Japan*
- MP 396 **Optimization of Negative Chemical Ionization Mass Spectrometry for Explosives for Two Gas Chromatographic/Mass Spectrometric Instruments from Different Manufacturers;** Bruce A. Benner, Jr.; Marcela C Najjarro; *NIST, Gaithersburg, MD*
- MP 397 **Quantitative Method for Sampling and Analysis of TATP vapors;** Sigalit Gura; Nitzan Tzanani; Moran Madmon; Ruth Barak; Shai Dagan; *IIBR, Ness Ziona, Israel*
- MP 398 **Atmospheric Pressure Gas Chromatography-Tandem Mass Spectrometry (APGC-MS/MS) an Alternative Analytical Tool for Chemical Warfare Agents and Related Compounds;** Hani Karam; *Battelle Memorial Institute, Columbus, OH*
- MP 399 **Tandem Gas Chromatographic-Mass Spectrometric (GC/GC/MS) Analysis of Fluoride-Regenerated Soman-Plasma Protein Adducts as Nerve Agent Biomarkers in Cynomolgus Macaques;** Kathleen Housman; Douglas Nichols; Todd Myers; J. Richard Smith; Benedict R. Capacio; *USA Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD*
- MP 400 **Capabilities of Molecular Imaging by High Resolution Mass Spectrometry with DESI and DART Sources;** Olivier Vigneau; Xavier Machuron-Mandard; *CEA, DAM, DIF, Arpajon, France*
- MP 401 **A New Tool for the Determination of ⁹⁰Sr and ^{135,137}Cs at Levels Relevant to Human Health;** John Eliades²; Xiao-Lei Zhao³; William E. Kieser³; Albert E. Litherland²; Jean-Francois Alary¹; Gholamreza Javahery⁴; Lisa M. Cousins⁴; ¹Isobarex Corp., Bolton, ON; ²University of Toronto, Toronto, Canada; ³University of Ottawa, Ottawa, Canada; ⁴IONICS Mass Spectrometry Group, Inc., Bolton, ON
- FOOD SAFETY, 402 - 424**
- MP 402 **A Turn-key Solution for Automated Detection of Organic Contaminants in Food Matrices and Economic Adulteration;** James Chang¹; Jessica Wang¹; Jennifer Sutton¹; Jon Wong²; Kai Zhang²; Paul Yang³; Michael Athanas⁴; ¹Thermo Fisher Scientific, San Jose, CA; ²FDA-CFSAN, College park, MD; ³Ministry of Environmental, Toronto, Canada; ⁴VAST Scientific, Cambridge, MA
- MP 403 **Multiclass Accurate Mass Screening of Veterinary Drugs in Animal Tissues – Value of Enhanced Sensitivity and Resolution for Reliable Identification;** Roberta Galarini¹; Thomas Glauner²; Nicola Cimino³; Giorgio Saluti¹; William Barry²; ¹Istituto Zooprofilattico Sperimentale UM, Perugia, Italy; ²Agilent Technologies, Waldbronn, Germany; ³Agilent Technologies SpA, Roma, Italy
- MP 404 **Quantitation Target Compound Ion Extraction Matched with Unknowns Analysis Component Perception;** Lei Tao; Li Sun; Vadim Kalmeyer; Yoshimasa Tsunoi; Marc Tischler; Harry Prest; *Agilent Technologies, Santa Clara, CA*
- MP 405 **Specific and Selective MS Detection for Food and Beverage Analysis by Ion Chromatography;** Steven R. Brown; William C. Schnute; Marcus Miller; Jinyuan Wang; *Dionex Corporation, Sunnyvale, CA*
- MP 406 **Comprehensive Detection and Quantitation of Trace Amounts in Complex Matrices using Ultra High-resolution TOFMS;** Viatcheslav Artaev; Jeffrey S. Patrick; Kevin Siek; Joe Binkley; *LECO Corporation, St Joseph, MI*
- MP 407 **HPTLC - MALDI-TOF: A Powerful Technique in the Analysis of Natural Products;** Paul Kowalski¹; Barbara Kessler²; Franz Mayer-Posner²; Martin Schürenberg²; ¹Bruker Daltonics, Inc., Billerica, MA; ²Bruker Daltonik GmbH, Bremen, Germany
- MP 408 **Comprehensive Confirmation Workflow for Full Scan Accurate Mass Multi-Target Screening of Pesticides in Food giving Results with Maximum Confidence;** Verena Tellstroem¹; Ellen Scherbaum²; Rebekka Loetterle²; Petra Decker¹; Oliver Raether¹; Ilmar Krebs¹; ¹Bruker Daltonik GmbH, Bremen, Germany; ²Chemisches und Veterinäruntersuchungsamt Stuttgart, Stuttgart, Germany
- MP 409 **UHPLC-APPI-MS for High-Sensitivity and High-Throughput Analysis of US EPA Sixteen Priority Pollutants Polynuclear Aromatic Hydrocarbons in Oyster;** Sheng-Suan (Victor) Cai¹; Joan Stevens²; Wayne Duncan²; Jack A.

- MP 410 Syage¹; ¹Syagen Technology, Inc., Tustin, CA; ²Agilent Technologies, Inc., Santa Clara, CA
Single Injection Analysis of Chemically Diverse Pesticide Mixtures using a Fast Switching APCI and ESI Dual Source; Herman Lam; Ricky Ng; Hexagram Analytics, Hong, Kong
- MP 411 **Analysis of 400+ Pesticides in a Single Run Using Triple Quadrupole Mass Spectrometer;** Jia Wang; Charles Yang; Jonathan Beck; Dipankar Ghosh; Thermo Fisher Scientific, San Jose, CA
- MP 412 **Improved Recovery of Milk Peptides from Digests and Calibration Standard Solutions for the Regulatory Analysis of Allergenic Food Proteins;** G. Asher Newsome; John H. Callahan; Peter F. Scholl; FDA/CFRAN, College Park, MD
- MP 413 **Statistical Approach in Targeted and Non-targeted Analyses of Suspicious Milk-Based Products Using LC-MS/MS Determinations;** Yi Lin¹; Narong Chamkasem²; Kai Zhang³; Jon Wong³; Andre Schreiber⁴; ¹FDA PRLSW, Irvine, CA; ²FDA/SRL, Atlanta, GA; ³FDA CFRAN, College Park, MD; ⁴AB SCIEX, Concord, Ontario, Canada
- MP 414 **Degradation and Oxidation Postmortem of Myofibrillar Proteins in Porcine Skeleton Muscle Revealed by High Resolution Mass Spectrometric Proteome Analysis;** Bogdan Bernevic; Brindusa-Alina Petre; Dmitry Galetskiy; Andreas Marquardt; Carsten Werner; Michael Wicke; Karl Schellander; Michael Przybylski; University, Konstanz, Germany
- MP 415 **The Detection of Artificial Sweeteners by LC/MS/MS;** Stephen J. Lock; AB SCIEX, Warrington, UK
- MP 416 **Rapid and Simultaneous Determination of Aloin-A, Aloe-emodin and Diacetyl Rhein by UPLC-ESI-MS/MS;** Perry Wang; Wanlong Zhou; Alexander Krynskiy; Jeanne Rader; FDA, College Park, MD
- MP 417 **Comprehensive Analysis of the B-Vitamin Complex in Food and Beverages by LC-MS/MS;** Stacy Tremintin¹; Christopher Borton¹; Rebecca E. Wittrig¹; Andre Schreiber²; ¹AB SCIEX, Foster City, CA; ²AB SCIEX, Concord, ON
- MP 418 **Rapid and Simple Method for the Simultaneous Determination of Glycidol and 3-MCPD Fatty Acid Ester in Edible Oils by LC/MS-MS;** Masahiko Takino; Hirokazu Sawada; Agilent Technologies Japan, Tokyo, Japan
- MP 419 **High Resolution TOF-MS Profiling of *Listeria monocytogenes*;** Patrick Pribil¹; Lisa Waddington²; Jeffrey VanDerRiet²; David Cox¹; Amandine Boudreau¹; Takeo Sakuma¹; ¹AB SCIEX, Concord, Canada; ²Canadian Food Inspection Agency, Dartmouth, Canada
- MP 420 **LC-MS/MS Quantification of DNA Adducts to Study the Genotoxicity of the Food Contaminants PhIP and B[a]P;** Emilien Jamin¹; Marc Audebert¹; Jérôme Molina¹; Thierry Douki²; Laurent Debrauwer¹; ¹INRA Toxalim, Metatoul platform, Toulouse, France; ²CEA, INAC, SCIB, LCIB (UMR_E 3 CEA-UJF), Grenoble, France
- MP 421 **A Proteomics Approach to *Listeria* Identification by MALDI Mass Spectrometry;** Patrick Pribil¹; Amandine Boudreau¹; Lisa Waddington²; Jacqueline Upham²; Jeffrey van der Riet²; David Cox¹; Takeo Sakuma¹; ¹AB SCIEX, Concord, Canada; ²Canadian Food Inspection Agency, Dartmouth, Canada

- MP 422 **Fast Mycotoxin Analysis with MRM, Full Scan MS, and Data Dependent MS-MS for Untargeted Screening;** Jeffrey H. Dahl; Christopher Gilles; Shimadzu Scientific Instruments, Columbia, MD
- MP 423 **Analysis of Mycotoxins Regulated in Europe using Stable Isotope Labeled Internal Standards and New Triggered MRM Acquisition in LC-MS/MS;** Elisabeth Varga^{1,2}; Katharina Mayer²; Franz Berthiller^{1,2}; Rainer Schuhmacher²; Michael Sulyok²; Rudolf Krska²; Thomas Glauner³; ¹Christian Doppler Laboratory, Mycotoxin Metabolism, Tulln, Austria; ²Center for Analytical Chemistry, IFA-Tulln, Tulln, Austria; ³Agilent Technologies GmbH, Waldbronn, Germany
- MP 424 **Development of a Foodborne Bacterial Pathogen PCR Electrospray Ionization Mass Spectrometry Biosensor Detection Assay for Rapid, High-Throughput Food Testing;** Ranga Sampath¹; Erik Burrows²; S. Allard²; Roberta Housley¹; Feng Li¹; Rebecca Bell²; Mark Allard²; ¹Ibis Biosciences, Inc., Carlsbad, CA; ²Center for Food Safety and Applied Nutrition, FDA, College Park, MD

INFORMATICS: FRAGMENTATION MECHANISM, 425 - 436

- MP 425 **Two-dimensional Correlation Mass Spectrometry (2D-CMS) as a Means of Discerning Collision Induced Dissociation Mechanisms in a Quadrupole Ion Trap;** Jessica Frisch; Balasubramaniam Lingam; Michael Sigman; Univ. Central FL / Natl. Center for Forensic Sci., Orlando, FL
- MP 426 **Improvements in Data-Dependent Acquisition Experiments for Protein Identification by Use of Novel Precursor Selection and Fragmentation Strategies;** Norton Kitagawa¹; Jose Meza¹; Christine Miller¹; Patrick D. Perkins¹; Joseph Roark¹; Javier Satulovsky²; Wilfred Tang¹; ¹Agilent Technologies, Inc., Santa Clara, CA; ²Agilent Laboratories, Santa Clara, CA
- MP 427 **Peptide Assistant: A Tool for Assisted Peptide Analysis;** Roger Moore; Denise Keen; Helen Ge; Gabriel Gugu; City of Hope, Duarte, CA
- MP 428 **Improvement in Analytical Software Makes a Difference on the Decision Tree Driven ETD and CID Fragmentation;** Baozhen Shan¹; Lei Xin¹; Mingjie Xie¹; Bin Ma²; ¹Bioinformatics Solutions Inc., Waterloo, Canada; ²University of Waterloo, Waterloo, ON
- MP 429 **Characterization and Sequence Identification of Peptides by the Method Involving UFLC Assay Coupled with MALDI-QIT-ToF Analysis;** Ningwei Zhao^{1,2}; Jin-ting Yao¹; ¹Shimadzu Global COE, Shanghai, China; ²Royal Institute of Technology (KTH), Stockholm, Sweden
- MP 430 **Statistical Evaluation of the Sequence Scrambling Effect on Peptide Identification in Shotgun Proteomics;** Anton A. Goloborodko¹; Mikhail V. Gorshkov¹; David M. Good²; Roman A. Zubarev²; ¹Institute for Energy Problems of Chemical Physics, Moscow, Russian Federation; ²Karolinska Institutet, Stockholm, Sweden
- MP 431 **iPRG 2011: A Study on the Identification of Electron Transfer Dissociation (ETD) Mass Spectra;** Lennart Martens¹; Manor Askenazi²; Nuno Bandeira³; Robert Chalkley⁴; Karl R. Clauser

- ⁵; Eric Deutsch⁶; Henry H. Lam ⁷; W. Hayes McDonald⁸; Thomas Neubert⁹; Paul Rudnick¹⁰; ¹Universiteit Gent, Gent, Belgium; ²Dana-Farber Cancer Institute and Hebrew University, Boston, MA; ³University of California, San Diego, La Jolla, CA; ⁴UCSF, San Francisco, CA; ⁵Broad Institute of MIT and Harvard, Cambridge, MA; ⁶Institute for Systems Biolog, Seattle, WA; ⁷Hong Kong University of Scie, Clear Water Bay, Hong Kong; ⁸Vanderbilt University, Nashville, TN; ⁹Skirball Institute, NYUMC, New York, NY; ¹⁰NIST, Gaithersburg, MD
- MP 432 **Matrix Effects in LC/ESI/MS Analyses**; Anneli Krueve; University of Tartu, Tartu, Estonia
- MP 433 **Correction of Mass Calibration Gaps in LC-MS Data**; Paul H Benton; Elizabeth J Want; Timothy Ebbels; Imperial College London, London, UK
- MP 434 **Automated Selection of Optimal Purification Conditions from LC/MS and SFC/MS Screening Methods**; Christine Aurigemma¹; William Farrell¹; Joseph Simpkins²; Mark Bayliss²; ¹Pfizer Global R&D - La Jolla Laboratories, San Diego, CA; ²Virscidian, Inc, Raleigh, NC
- MP 435 **Increased ECM Protein Identity from using a Guided, Iterative Workflow in Searches using Mascot**; Chelsey Zaharris¹; Brittany Hodges ¹; Kirk Hansen²; ¹University of Colorado, Aurora, CO; ²Univ. of CO. Denver, AMC, Aurora, CO
- MP 436 **Towards High Sample Throughput – Considerations and Approaches**; Gordana Ivosev¹; J.C. Yves Leblanc¹; Ron Bonner¹; Kai Schuhmann²; Andrej Shevchenko³; Brad Schneider¹; Thomas Covey¹; ¹AB SCIEX, Concord, CANADA; ²MPI-CBG, Dresden, Germany; ³MPI of Mol Cell Biology and Genetics, Dresden, Germany
- INFORMATICS: PEPTIDE IDENTIFICATION AND CHARACTERIZATION, 437 - 470**
- MP 437 **Precursor Charge Prediction for Mass Spectrometry Based Peptide Identification**; Lian Yang; Bin Ma; University of Waterloo, Waterloo, Canada
- MP 438 **Correction of Systematic Errors and Optimized Binning of Low Resolution MS/MS Data Improves Mass Measurement Accuracy and Database Search Results**; Jarrett Egertson; Jimmy Eng; Gennifer Merrihew; Michael J. MacCoss; University of Washington, Seattle, WA
- MP 439 **SEQUEST Search with a Precursor Mass Tolerance of 10 ppm to 5.1 Da- Comparison of Search Stringencies and FDR**; Lichieh Julie Chu; Rueyhung Roc Weng; Wailap Victor Ng; National Yang Ming University, Taipei, Taiwan
- MP 440 **From Peptides to Proteins and PTM's: Extending the Target-Decoy Strategy to Quantify and Control Error Rates within Large-Scale Proteomics Analyses**; Edward L. Huttlin; Deepak Kolippakkam; Mark Jedrychowski; Ronghu Wu; Woong Kim; Wilhelm Haas; Steven Gygi; Harvard Medical School, Boston, MA
- MP 441 **Protein Identification Using Top-Down Spectra**; Xiaowen Liu¹; Yufeng Shen²; Gordon Anderson²; Yihuan Tsai³; Ying Sonia Ting ³; David R. Goodlett ³; Richard D. Smith²; Vineet Bafna¹; Pavel Pevzner¹; ¹University of California, San Diego, La Jolla, CA; ²Pacific Northwest National Laboratory, Richland, WA; ³University of Washington, Seattle, WA
- MP 442 **Top-Down Precursor Acquisition Independent From Ion Count (PACIFIC)**; Elizabeth Nguyen¹; Dave Goodlett¹; Sonia Ying¹; Jimmy Eng¹; Patrick Langridge-Smith²; Logan Mackay²; ¹University of Washington, Seattle, WA; ²SIRCAMS, School of Chemistry, Edinburgh University, Edinburgh, Scotland
- MP 443 **Influence of Search Parameters and Mass Spectrometry Data Quality on Search Engine Performance in Shotgun Proteomics: A Systematic Study**; Lev I. Levitsky; Anton A. Goloborodko; Mikhail V. Gorshkov; Institute for Energy Problems of Chemical Physics, Moscow, Russian Federation
- MP 444 **Partially Sequenced Organisms, Decoy Searches and False Discovery Rates**; Bjorn Victor²; Sarah Gabriël²; Kirezi Kanobana²; Katja Polman²; Pierre Dorny²; André Deelder¹; Magnus Palmblad¹; ¹Leiden University Medical Center, Leiden, Netherlands; ²Institute of Tropical Medicine, Antwerp, Belgium
- MP 445 **Peptide Search Algorithm by Selecting and Rescoring Reliable Peaks for MSⁿ (n>1) Spectra**; Kentaro Morimoto¹; Masaki Murase¹; Tsuyoshi Tabata²; Shigeki Kajihara¹; Yoshiya Oda²; Koichi Tanaka ¹; ¹Shimadzu corporation, Kyoto, Japan; ²Eisai Product Creation Systems, Tsukuba, Japan
- MP 446 **Chromatographic Elution Time Based Clustering for Data-independent Mass Spectrometry**; HuiSong Pak¹; Carla Pasquarello¹; Alexander Scherl¹; Markus Mueller²; ¹University of Geneva, Geneva, Switzerland; ²Swiss Institute of bioinformatics, Geneva, Switzerland
- MP 447 **Unbiased False Discovery Rate Estimation After Peptide- and Protein-level Integration of Shotgun Proteomics Search Results**; Yong J. Kil¹; Peizhe Shi²; Marshall W. Bern¹; ¹Palo Alto Research Center, Palo Alto, CA; ²Applied Mathematics, University of Washington, Seattle, WA
- MP 448 **An Examination of the Impact of Database Sequence Similarity on Differences in Protein Grouping Across Software Packages**; Thomas McGowan¹; Pratik Jagtap²; Sean L. Seymour³; Leeann Higgins ¹; Sricharan Bandhakavi⁴; Tim Griffin¹; ¹University of Minnesota, St. Paul, MN; ²Minnesota Supercomputing Institute, UMN, Minneapolis, MN; ³AB SCIEX, Foster City, CA; ⁴Bio-Rad Laboratories, Hercules, CA
- MP 449 **Mining Millions of Assigned Peptides in Order to Identify Characteristics of Incomplete Protein Sequence Coverage**; Dylan Storey¹; Brian Erickson¹; Rachel Adams¹; Sally Ellingson¹; Rick Weber¹; Harry Richards¹; Robert Hettich²; ¹SCALE-IT, University of Tennessee, Knoxville, TN; ²Oak Ridge National Laboratory, Oak Ridge, TN
- MP 450 **Spec2spec – A Spectrum-to-Spectrum Search Engine Using Proteome-wide Spectral Libraries**; Chia-Yu Yen¹; Stephane Houel ^{1,2}; Natalie Ahn^{1,2}; William Old¹; ¹University of Colorado at Boulder, Boulder, CO; ²Howard Hughes Medical Instit, Boulder, CO
- MP 451 **Improving Confidence in Peptide Identification by CID and ETD through Combined Use of Trypsin and Carboxypeptidase B**; Ross Chawner¹; David Wedge¹; Simon J. Gaskell²; Claire Evers¹;

- ¹University of Manchester, Manchester, UK;
²Queen Mary University of London, London, UK
- MP 452 **Improvement of Peptide-Spectrum Match Validation Techniques Using an Enriched XCorr-based Feature Set;** Marina Spivak¹; Jason Weston²; William Stafford Noble¹; ¹University of Washington, Seattle, WA; ²Google Research, New York, NY
- MP 453 **Breaking the 2000 Proteins Barrier in a Standard LC Run using a New Benchtop Orbitrap Instrument and Multiple Search Engines;** Carmen Paschke; Yue Xuan; Eugen Damoc; Torsten Ueckert; Ute Comberg; Hans Grensemann; Markus Kellmann; Bernard Delanghe; Thermo Fisher Scientific, Bremen, Germany
- MP 454 **Improved Middle-Down Proteomics with High Mass Accuracy Tandem Mass Spectrometry and Mass Accuracy Sensitive Database Search;** Jia You¹; Michael A. Freitas¹; Hua Xu²; ¹Ohio State University, Columbus, OH; ²Case Western Reserve University, Cleveland, OH
- MP 455 **ROCCIT: A Next Generation MS/MS Protein Database Search Engine;** Michael J Sweredoski; Geoffrey T Smith; Anastasia Kalli; Robert Lj Graham; Sonja Hess; Caltech, Pasadena, CA
- MP 456 **Blocked Pattern Matching Problem and its Applications in Computational Proteomics;** Julio Ng; Pavel Pevzner; UCSD, La Jolla, CA
- MP 457 **PeaksDB: New Software for Substantially Improved Peptide Identification from Orbitrap ETD Mass Spectrometry;** Jing Zhang¹; Baozhen Shan¹; Lei Xin¹; Bin Ma²; ¹Bioinformatics Solutions Inc., Waterloo, Canada; ²University of Waterloo, Waterloo, Canada
- MP 458 **Enabling the Generation of Long and Accurate Gapped Peptides;** Kyowon Jeong; Pavel Pevzner; UCSD, La Jolla, CA
- MP 459 **gMacro: GPU-CPU Computing for High Throughput Peptide Spectral Matching;** Brendan Faherty; Jeffrey Milloy; Scott A. Gerber; Dartmouth Medical School, Lebanon, NH
- MP 460 **Dispelling the Protein Inference Nightmare for Identification and Quantification;** Marc Vaudel¹; René P Zahedi¹; Albert Sickmann¹; Julia M Burkhardt¹; Lennart Martens²; ¹ISAS, Dortmund, Germany; ²University of Gent, Gent, Belgium
- MP 461 **Constrained De Novo Sequencing of Peptides with Application to Conotoxins;** Swapnil Bhatia^{1,2}; Yong Kil¹; Beatrix Ueberheide³; Brian Chait³; Lemmuel Tayo^{4,5}; Lourdes Cruz⁵; Bingwen Lu^{6,7}; John Yates⁷; Marshall W. Bern¹; ¹Palo Alto Research Center, Palo Alto, CA; ²Boston University, Boston, MA; ³The Rockefeller University, New York, NY; ⁴Mapua Institute of Technology, Manila, Philippines; ⁵Marine Science Institute, U. of the Philippines, Quezon City, Philippines; ⁶Pfizer, Inc., Pearl River, NY; ⁷The Scripps Research Institute, La Jolla, CA
- MP 462 **De Novo Sequencing vs. Database Search;** Jing Zhang¹; Bin Ma²; ¹Bioinformatics Solutions Inc., Waterloo, Canada; ²University of Waterloo, Waterloo, Canada
- MP 463 **Large Improvements in MS/MS Based Peptide Identification Rates using a Hybrid Analysis;** William Cannon¹; Mitchell Rawlins¹; Douglas Baxter¹; Ananth Kalyanaraman²; Mary Lipton¹; Stephen J. Callister¹; Donald Bryant³; ¹Pacific NW National Lab, Richland, WA; ²Washington State University, Pullman, WA; ³Pennsylvania State University, University Park, PA
- MP 464 **RAId_aPS: MS/MS Analysis with Multiple Scoring Functions and Spectrum-Specific Statistics;** Gelio Alves; Aleksey Y Ogurtsov; Yi-Kuo Yu; National Center for Biotechnology Information, NLM, Bethesda, MD
- MP 465 **New Effects of Mass Defect from Complete Mapping of all Theoretically Possible Peptide Masses and from Pos-Translational Modifications;** Indranil Mitra^{1,2}; Rovshan Sadygov^{1,2}; ¹Dept of Biochemistry and Molecular Biology, UTMB, Galveston, TX; ²Sealy Center for Molecular Medicine, UTMB, Galveston, TX
- MP 466 **"Identify Me", Says the Alien Peptide! Combining Publicly Available Mass Spectrometry Repositories and Clustering Tools is How!;** Gerben Menschaert; Eisuke Hayakawa; Geert Baggerman; K.U.Leuven, Leuven, Belgium
- MP 467 **Exposing the Target-decoy Approach for Peptide Identifications: Lessons from Examples;** Sangtae Kim; Nuno Bandeira; University of California, San Diego, La Jolla, CA
- MP 468 **Quality of Database Matches for MS/MS Spectra Can Be Computed Analytically;** Andrey Gorin; Robert M. Day; Nikita D. Arnold; Tamah Fridman; Oak Ridge National Laboratory, Oak Ridge, TN
- MP 469 **BPDA2D – An Improved Bayesian Peptide Detection Algorithm for Mass Spectrometry;** Youting Sun¹; Jianqiu Zhang²; Ulisses Braga-Neto¹; Edward R. Dougherty¹; ¹Texas A&M University, College Station, TX; ²University of Texas at San Antonio, San Antonio, TX
- MP 470 **PILOT_PROTEIN: A Novel Approach for Modified Protein Identification via High Resolution Tandem Mass Spectrometry and Integer Linear Optimization;** Richard C. Baliban; Peter A. Dimaggio; Mariana D. Plazas-Mayorca; Benjamin Garcia; Christodoulos A. Floudas; Princeton University, Princeton, NJ
- NEUROPEPTIDES: QUALITATIVE AND QUANTITATIVE ANALYSIS, 471 - 476**
- MP 471 **Mass Spectral Imaging of Neurotransmitters and Neuropeptides in the Central Nervous System of Lobster *Homarus americanus* at Multiple Developmental Stages;** Xiaoyue Jiang; Hui Ye; Lingjun Li; School of Pharmacy, University of Wisconsin-Madison, Madison, WI
- MP 472 **Monolithic Based Immobilized-pH Gradient Capillary Isoelectric Focusing and Monolithic Liquid Chromatography for Neuropeptide Analysis;** Zichuan Zhang; Junhua Wang; Lingjun Li; School of Pharmacy, University of Wisconsin, Madison, WI
- MP 473 **Discovery and Functional Study of a Novel Tachykinin from *Callinectes sapidus* via a Multi-faceted MS Approach;** Limei Hui¹; Yuzhuo Zhang¹; Junhua Wang¹; Aaron Cook²; Hui Ye¹; Michael P. Nusbaum²; Lingjun Li¹; ¹Univ. of Wisconsin-Madison, Madison, WI; ²University of Pennsylvania, Philadelphia, PA
- MP 474 **Dimethylated Leucine Isobaric Tags for Relative Quantitation of Crustacean Neuropeptides at Multiple Feeding States;**

- MP 475 Feng Xiang; Nicole Woodards; Lingjun Li; *University of Wisconsin, Madison, WI*
Quantitation Study of Biogenic Amines and Crustacean Hyperglycemic Hormone (CHH)-family Peptides in Crustacean Nervous System by Novel DiLeu Labeling Technique; Chenxi Jia; Xiaoyue Jiang; Feng Xiang; Zhidan Liang; Limei Hui; Lingjun Li; *UW-Madison, Madison, WI*
- MP 476 **Characterization of the *Drosophila melanogaster* Neuropeptidome and the Identification of Circadian Related Neuropeptides across Multiple Mass Spectrometric Platforms;** Kristin J. Boggio¹; Yun-Wei A. Hsu²; Kevin Yves Amon¹; Qian Liu¹; Paul J. Kowalski³; Michael L. Easterling³; Nathalie YR Agar⁴; Jeffrey N. Agar¹; ¹*Brandeis University, Waltham, MA*; ²*Seattle Children's Research Initiative, Seattle, WA*; ³*Bruker Daltonics, Inc., Billerica, MA*; ⁴*Harvard Medical School, Neurosurgery, Boston, MA*
- PHOSPHOPEPTIDES: ENRICHMENT METHODS, 477 - 489**
- MP 477 **Preparation of Multi-layer Open Tubular Capillary Columns Coated with Zirconium Phosphonate for Phosphopeptide Enrichment and Identification by Mass Spectrometry;** Yangjun Zhang; Lu Wang; Weijie Qin; Wanjun Zhang; Xiaohong Qian; *Beijing Institute of Radiation Medicine, Beijing, China*
- MP 478 **Sequence Dependent Enrichment of a Model Phosphopeptide: A Combined MALDI-TOF and NMR Study;** Lucrece Matheron; Emmanuelle Sachon; Fabienne Burlina; Sandrine Sagan; Olivier Lequin; Gerard Bolbach; *Univ. P. et M. Curie, Paris, France*
- MP 479 **Evaluation of a Novel Support for Selective and Efficient Enrichment of Phosphorylated Peptides;** Dalila Bensaddek¹; Wenzhang Chen¹; Douglas J. Lamont¹; Justin Jordaan²; Isak Gerber²; ¹*University of Dundee, Dundee, UK*; ²*Molecular Biomaterials Group, CSIR Biosciences, Pretoria, South Africa*
- MP 480 **Zirconium(IV)-functionalized Soluble Nanopolymer for Efficient Phosphoproteomics Analysis;** Keerthi Jayasundera; Anton Iliuk; Andrew Nguyen; Wenhorang Wang; Robert Geahlen; Weiguo Andy Tao; *Purdue University, West Lafayette, IN*
- MP 481 **Development of Optimized Phosphopeptide Enrichment Methods for Comparison of Starved and Glucose Fed Yeast *Saccharomyces Cerevisiae*;** Robert Cunningham¹; Michael Conway²; Daniel Wellner²; Douglas Grunwald²; Warren Heideman²; Lingjun Li^{1,2}; ¹*Department of Chemistry, UW-Madison, Madison, WI*; ²*School of Pharmacy, UW-Madison, Madison, WI*
- MP 482 **Phosphopeptide Enrichment Using Amine-functionalized and Metal-containing Sol-Gels for MALDI-MS;** Mehmet Atakay; Ömür Çelikbiçak; Bekir Salih; *Hacettepe University, Department of Chemistry, Ankara, Turkey*
- MP 483 **Automated Quantitative Phosphopeptide Enrichment using Titania-packed Capillary Columns and its Application to Human Tissues for Label-Free Phosphoproteomics;** Brenna M. Richardson; Erik J. Soderblom; J. Will Thompson; M. Arthur Moseley; *Duke University School of Medicine, Durham, NC*
- MP 484 **Comprehensive Phosphopeptide Enrichment Strategy for Analysis of Complex Biological Samples;** Amanuel Kehasse; Nancy Leymarie; Vickery Trinkaus-Randall; Mark E. McComb; Catherine E. Costello; *Boston University, Boston, MA*
- MP 485 **Complementary Metal-directed Immobilized Metal Ion Affinity Chromatography for Phosphoproteomic Profiling of Human Mesenchymal Stem Cells;** Chia-Feng Tsai¹; Chuan-Chih Hsu²; Yu-Ni Sun³; Yu-Ju Chen^{1,2}; ¹*National Taiwan University, Taipei, Taiwan*; ²*Academia Sinica, Taipei, Taiwan*; ³*National Taiwan Ocean University, Keelung, Taiwan*
- MP 486 **A Multidimensional Phosphopeptide Enrichment Strategy Employing Titanium Dioxide Combined with SIMAC and HILIC for Highly Sensitive Phosphoproteomics;** Kasper Engholm-Keller; Giuseppe Palmisano; Pernille Birck; Melanie Schulz; Martin R. Larsen; *Univ. of Southern Denmark, Odense M, Denmark*
- MP 487 **Phosphopeptide Enrichment Using Fe and Zn Ions Captured on Polymer Encapsulated Gold Nanoparticles;** Phillip Lang; David H. Russell; *Texas A&M University, College Station, TX*
- MP 488 **Magnetic Iron Oxide Nanoparticle Enrichment of Phosphopeptides on a Radiate Microstructure MALDI chip;** Chien-Chen Lai¹; Shun-Yuan Chen^{1,2}; Chih-Sheng Yu²; ¹*National Chung Hsing University, Taichung, Taiwan*; ²*National Applied Research Laboratories, Hsinchu, Taiwan*
- MP 489 **Mass Spectrometry Analysis of Cytoplasmic Phosphoproteins in Gamma-irradiated T-lymphocyte Leukaemic Cells (MOLT-4);** Ales Tichy; Pavel Rehulka; Barbora Salovska; Lenka Hernychova; *Faculty of Military Health Sci., Univ. of Defence, Hradec Kralove, Czech Republic*
- PHOSPHOPEPTIDES: SEQUENCE ANALYSIS, 490 - 495**
- MP 490 **Improved Negative Ion Electron Capture Dissociation from Coupling with Proton Transfer Reaction;** Hangtian Song; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*
- MP 491 **Identification of Tau Protein Phosphorylation Sites Using Nanospray Liquid Chromatography Tandem Mass Spectrometry;** Jhoana Mendoza¹; Georgia Dolios¹; Koichi Iijima²; Kanae Iijima-Ando²; Rong Wang¹; ¹*Mount Sinai School of Medicine, New York, NY*; ²*Thomas Jefferson University, Philadelphia, PA*
- MP 492 **The Mechanism Study of a New Coumarin-derivative, HQO-0601, A Human Leukemia Agonist;** Yu-Chin Lin^{1,2}; Wei-Ting Liu³; Chi-Hsin Chen¹; Pang-Yi Liu¹; Tai-Chi Wang⁴; Pieter C. Dorrestein^{2,5}; Shin-Hun Juang^{6,7}; ¹*School of Pharmacy, China Medical University, Taichung, Taiwan*; ²*Skaggs School, University of California, San Diego, San Diego, United States*; ³*Chemistry and Biochemistry, UC San Diego, San Diego, United States*; ⁴*Department of Pharmacy, Tajen University, Pingtung, Taiwan*; ⁵*Scripps Institution of Oceanography, UC San Diego, San Diego, United States*; ⁶*Pharmaceutical Chemistry, China Medical University, Taichung, Taiwan*; ⁷*Hospital*

- Medical Research China Medical University, Taichung, Taiwan
- MP 493 **Extensive Phosphoproteomic Comparison Between Orbitrap HCD and Ion-trap CID Fragmentation Types Renders over 20,000 Murine Brain Sites;** Mark Jedrychowski¹; Wilhelm Haas¹; Edward Huttlin¹; Mathew Sowa²; John Rush²; Steven Gygi¹; ¹Harvard Medical School, Boston, MA; ²Cell Signaling Technology, Danvers, MA
- MP 494 **Pinpointing Phosphorylation: Quantitative Filtering and a Novel Site-specific X-ion Fragment;** Christian Kelstrup; Omid Hekmat; Chiara Francavilla; Jesper V. Olsen; CPR, University of Copenhagen, Copenhagen N, Denmark
- MP 495 **Improving the Confidence in Phosphorylation Site Assignment using a Maximum Confidence Approach (MCA);** René Zahedi; Florian Beck; Marc Vaudel; Albert Sickmann; ISAS, Dortmund, Germany

PEPTIDOMICS, 496 - 508

- MP 496 **A High Throughput Quantitative Peptidomic Approach for the Discovery of Plant Signaling Peptide;** Yun-Wei Kuo^{1,2}; Ying-Lan Chen^{1,3}; Chih-Yu Lin¹; Han-Jia Lin²; Yet-Ran Chen^{1,2}; ¹ABRC, Academia Sinica, Taipei, Taiwan; ²Institute of Bioscience and Biotechnology, NTOU, Keelung, Taiwan; ³Institute of Plant Biology, NTU, Taipei, Taiwan
- MP 497 **Does External Microbes Affect the Synthesis of Amphibian Defense Peptides?**; Vladimir Gorshkov¹; Galina El-Registan³; Tatiana Samgina¹; Yegor Vorontsov¹; Roman Zubarev²; Sergey Ogourtsov¹; Elena Demkina³; Albert T. Lebedev¹; ¹Moscow State University, Moscow, Russian Federation; ²Karolinska Institute, Stockholm, Sweden; ³Microbiology institute RAN, Moscow, RU
- MP 498 **Mass Spectrometry Based Structural Characterization of Peptidic Natural Products (PNPs);** Wei-Ting Liu; Hosein Mohimani; Pavel Pevzner; Pieter Dorrestein; University of California, San Diego, La Jolla, CA
- MP 499 **Using LC-ESI-MS-MRM Methods to Identify D-Amino Acids in Endogenous Neuropeptides;** Lu Bai; Jonathan Sweedler; University of Illinois at Urbana-Champaign, Urbana, IL
- MP 500 **Natural Product Peptidogenomics (NPP): A Mass Spectrometry-Guided Genome Mining Approach for Peptidic Natural Product Discovery;** Roland D. Kersten¹; Michael A. Fischbach²; Bradley S. Moore^{1,3}; Pieter C. Dorrestein^{1,3}; ¹SIO-UCSD, La Jolla, CA; ²UCSF, San Francisco, CA; ³SSPPS-UCSD, La Jolla, CA
- MP 501 **The Quest for Small Non-tryptic Peptides: Food Bioactives;** Alexandre Panchaud; Michael Affolter; Sophie Lagache; Irma Silva Zolezzi; Martin Kussmann; Nestlé Research Center, Lausanne, Switzerland
- MP 502 **Native Peptides from Plasma: Top-Down Identifications using ETD and HCD Mass Spectrometry;** Hans-Dieter Zucht; Stephan Jung; Sasa Koncarevic; Karsten Kuhn; Marco Schärfke; Petra Budde; Proteome Sciences R&D GmbH & Co. KG, Frankfurt, Germany
- MP 503 **Simple and Generic Approach for the Absolute Quantification of Large and Undigested Peptides in Plasma using a**

- Particular LC-MS/MS set-up;** Bilgin Vatansever¹; Hamid Reza Sobhi¹; Arno Wortmann¹; Eric Grouzmann²; Bertrand Rochat¹; ¹qMSF - CHUV, Lausanne, Switzerland; ²Clinical Pharmacology - CHUV, Lausanne, Switzerland
- MP 504 **Comparison of CE-MS and LC-MS Peptide Profiling Method for Clinical Application;** Min-Jung Kang; Chang No Yoon; Young Sook Yoo; KIST, Seoul, South Korea
- MP 505 **Heat Stabilization Enhances Detection of Hormones in the Mouse Thymus;** Henrik Alm²; Olof Sköld¹; Mats Borén¹; Birger Scholz²; Marcus Söderquist¹; Karl Sköld¹; Kim Kultima²; ¹Denator, Göteborg, Sweden; ²Uppsala University, Uppsala, Sweden
- MP 506 **Top-Down Label-Free LC-MALDI Analysis of the Peptidome during Neural Progenitor Cell Differentiation Identifies Progenitor Cell Markers;** Daniel Maltman¹; Sven Brand²; Eckhard Belau²; Peter Brechlin²; Detlev Suckau²; Paaper Rainer²; Stefan Przyborski¹; ¹Durham University, Durham, UK; ²Bruker Daltonik GmbH, Bremen, Germany
- MP 507 **Oxyntomodulin-analog Intact Peptide Quantitation from Rat Brain Tissue by LC/MS/MS Analysis; Evaluating and Optimizing Tissue Sample Preparation Techniques;** Katherine Wright; Mengmeng Wang; Lei Sun; Jennifer Spencer-Pierce; Dawn Dufield; Pfizer, Andover, MA
- MP 508 **Comparison of Neuropeptides Stability using Different Preparation Protocols for Mass Spectrometry-based Targeted Peptidomic Analysis;** Floriane Pailleux; Francis Beaudry; Université de Montréal, St-Hyacinthe, Canada

PEPTIDES: QUANTITATIVE ANALYSIS – METABOLIC LABELLING, 509 - 520

- MP 509 **SILAC Zebrafish Enables *in vivo* Monitoring of Cardiac Morphogenesis;** Anne Konzer; Helene Braun; Aaron Ruhs; Benno Jungblut; Thomas Braun; Marcus Krüger; Max-Planck-Institute for Heart and Lung Research, Bad Nauheim, Germany
- MP 510 **Quantitative Mass Spectrometry to Study the Effect of Histone H4 Acetylation;** Diana Lang; Dirk Schwarzer; Eberhard Krause; Inst Mol Pharm Berlin, Berlin, Germany
- MP 511 **Relative Quantitation of Osteoclast Proteome using 3 Plex SILAC;** Eunkyoung An¹; Sung Kyu Park²; Ronald Germain¹; Aleksandra Nita-Lazar¹; ¹NIH/NIAID/PSIIM, Bethesda, MD; ²The Scripps Research Institute, La Jolla, CA
- MP 512 **Quantitative Proteomic and Interaction Network Analysis of Drug Resistance in HeLa Cells;** Juan Chavez¹; Michael R. Hoopmann¹; Chad Weisbrod¹; Kohji Takara²; James Bruce¹; ¹University of Washington, Seattle, WA; ²Himeji Dokkyo University, Himeji, Japan
- MP 513 **Middle Down Histone Quantification using Stable Isotope Labeling by Amino Acids in Cell Culture;** Barry Zee; Nicolas L. Young; Peter A. Dimaggio; Benjamin Garcia; Princeton University, Princeton, NJ
- MP 514 **Mass Spectrometry Detects SHARPIN-Dependent Linear Ubiquitylation on NEMO;** Mirita Franz-Wachtel¹; Fumiyo Ikeda²; Nicole Sessler¹; Karsten Krug¹; Sjoerd van Wijk²; Ivan Dikic²; Boris Macek¹; ¹Proteome Center Tuebingen,

- MP 515 Tuebingen, Germany; ²Frankfurt Institute for Molecular Life Sciences, Frankfurt, Germany
Quantitative Analyses Of Silac-Labeled Proteomes Using MASCOT, InsPecT and ProteoIQ; Oliver Fregoso¹; Brent Weatherly^{2,3}; Cornel Ghiban¹; Benjamin Weindorf¹; Adrian Krainer¹; Cristian I. Ruse¹; Darryl Pappin¹; ¹Cold Spring Harbor Laboratory, Cold Spring Harbor, NY; ²NuSep, Inc, Bogart, GA; ³University of Georgia, Athens, GA
- MP 516 **Automated Approach to Detect Peptide Level Changes Within SILAC LC-MS/MS Data Sets;** Xiaoyan Guan; Neha Rastogi; Mark R. Parthun; Michael A. Freitas; *Ohio State University, Columbus, OH*
- MP 517 **OFFGEL Fractionation of SILAC Labeled Proteins after Stimulation of Jurkat cells with Human Serum from Ankylosing Spondylitis Patients;** Roman Fischer¹; Moritz Wagner²; David Trudigan¹; Paul Bowness³; Benedikt Kessler¹; ¹Centre for Cellular and Molecular Physiology, Oxford, UK; ²Agilent Technologies, Hewlett-Packard-Strasse, Waldbronn, Germany; ³Weatherall Institute for Molecular Medicine, Oxford, UK
- MP 518 **Improved Quantification of Labeled LC-MS;** Long Chen¹; Jianqiu Zhang²; ¹Univ. of Texas at San Antonio, San Antonio, TX; ²University of Texas at San Antonio, San Antonio, TX
- MP 519 **Direct Comparison of Stable Isotope Labeling by Amino Acids in Cell Culture and Label Free Spectral Counting for Quantitative Proteomics;** Timothy S. Collier; Prasensjit Sarkar; William L. Franck; Balaji M. Rao; Ralph A. Dean; David C. Muddiman; *North Carolina State University, Raleigh, NC*
- MP 520 **Simultaneous Determination of ¹⁵N-Incorporation into Proteins and their Absolute Quantification Based on LC/MS^E Analysis;** Lynn Ullmann-Zeunert¹; Natalie Wielsch¹; Karin Groten¹; Alexander Muck²; Franziska Hufsky^{1,3}; Sebastian Böcker³; Aleš Svatoš¹; Ian Baldwin¹; ¹Max Planck Institute for Chemical Ecology, Jena, Germany; ²Waters GmbH, Eschborn, Germany; ³Friedrich-Schiller-University, Jena, Germany
- PEPTIDES: GENERAL, 521 - 529**
- MP 521 **Trends for Nominal Mass Isobars in Proteomics;** Long Yu; Nicolas Polfer; *University of Florida, Gainesville, FL*
- MP 522 **Derivation of Five Essential Factors to Predict Peptide Tandem Mass Spectrometric Detectability;** Sunhee Jung¹; Samuel Danziger²; Alexandre Panchaud³; Priska von Haller¹; John Aitchison²; David R. Goodlett¹; ¹University of Washington, Seattle, WA; ²Institute for Systems Biology, Seattle, WA; ³Nestle Research Center, Lausanne, Switzerland
- MP 523 **Y not B? The Occurrence of b-ions on Different Mass Spectrometers Platforms;** Daniel Waldera; Anja Stefanski; Sebastian Link; Anke Schnabel; Helmut E. Meyer; Kai Stühler; *Medizinisches Proteom-Center, Bochum, Germany*
- MP 524 **Renaissance of Reporter Ions;** Helena Barysz; Lutz Fischer; Zhuo Chen; Salman Tahir; Juri Rappsilber; *University of Edinburgh, Edinburgh, UK*
- MP 525 **Gas Phase Covalent Modification of Tryptic Peptides and Poorly Fragmenting Cyclic Peptides via Ion/Ion Reactions;** John Stutzman; *Purdue University, West Lafayette, IN*
- MP 526 **Evaluation of the Selectivity of Histidine-Containing Peptides for Transition Metals by ESI-MS, along with Isocratic and Gradient HPLC-UV;** Doug Carlton¹; Heather Tipples¹; Robert Rayford¹; Eunice Murage²; Jung-Mo Ahn²; Kevin Schug¹; ¹The University of Texas at Arlington, Arlington, TX; ²The University of Texas at Dallas, Dallas, TX
- MP 527 **An Investigation of Factors Influencing the Detection of Peptides by Laser Desorption/Ionization (LDI) Mass Spectrometry;** Christopher C. Lai; Qian Sun; James A. Kelley; *Chemical Biology Laboratory, NCI/NIH, Frederick, MD*
- MP 528 **A Novel Sample Preparation Method for Quantitative Analysis of Insulin Analogues Using Liquid Chromatography-Tandem Mass Spectrometry;** Hsuan-Shen Chen; Xinchun Tong; Lucinda Cohen; *Merck & Co., Inc., Rahway, NJ*
- MP 529 **Peptide-in-a-Tip: An Optimized Protocol for High-throughput Peptide Synthesis using Tips Packed with Chromatographic Media;** Mukta Shukla¹; Johannes Hewel²; Dirk Winkler³; Eva-Maria Keidel⁴; Maria Mangos⁵; ¹Glygen Corp., Columbia, MD; ²Donnelly Centre, University of Toronto, Toronto, ON; ³Kinexus Bioinformatics Corporation, Vancouver, Canada; ⁴MPI of Biochemistry, Munich, Germany; ⁵University of Toronto, Ontario Cancer Inst, Toronto, Canada
- MICROBIAL ANALYSIS; 530 - 556**
- MP 530 **Quantitative Proteomics of Intracellular Campylobacter Jejuni Reveals Metabolic Reprogramming;** Xiaoyun Liu; Beile Gao; Veronica Novik; Jorge Galan; *Yale University School of Medicine, New Haven, CT*
- MP 531 **Addressing Protein Degeneracy Using MS-based Proteomics and a Model Human Gut Microbiota of 12 Bacterial Species Established in Gnotobiotic Mice;** Alison R. Erickson^{1,2}; Nathan P. McNulty³; Patricia Carey²; Nathan C. Verberkmoes²; Jeffrey I. Gordon³; Robert L. Hettich²; ¹University of Tennessee, Knoxville, TN; ²Oak Ridge National Laboratory, Oak Ridge, TN; ³Washington University School of Medicine, St. Louis, MO
- MP 532 **Systematic Comparison of Spectral Counting, Metabolic Labeling, and Chemical Labeling Approaches for Quantitative Proteomics on LTQ-Orbitrap-Velos;** Zhou Li¹; Rachel Adams¹; Karuna Chourey²; Robert Hettich²; Chongle Pan²; ¹UT-ORNL Graduate School of Genome Science and Tech, Knoxville, TN; ²Oak Ridge National Laboratory, Oak Ridge, TN
- MP 533 **Unraveling Metabolic Pathways in Haloalkaliphilic Sulfur Bacteria using Proteomics;** Martijn Pinkse; Qiao Hua; Dimitry Sorokin; Gerard Muijzer; Peter Verhaert; *Delft University of Technology, Delft, Netherlands*
- MP 534 **The Proteome of Chlamydomonas reinhardtii Under Stress;** Hong Hanh Nguyen¹; Cristian Piras²; Janette Kropat¹; Melissa Sondej¹; Paola Roncada³; Sabeeha Merchant¹; Joseph A. Loo¹; Rachel O. Loo¹; ¹UCLA, Los Angeles, CA; ²University of Sassari, Sardinia, Italy; ³Istituto

- MP 535 *Sperimentale Italiano Lazzaro Spallanzani, Milan, Italy*
Bottom-up Proteomic Analysis of Free Living and Symbiotic *Nostoc punctiforme*; Diana Tran¹; John C. Meeks²; Elsie Campbell²; Barrett Smith¹; Brett S. Phinney¹; ¹UC Davis Proteomics Core, Davis, CA; ²Section of Microbiology, University of California, Davis, CA
- MP 536 **Comprehensive Proteomic Profiling of *C. difficile* Spores**; Lu Yu; Chinyere Okoro; Trevor Lawley; Gordon Dougan; Jyoti Choudhary; Wellcome Trust Sanger Institute, Hinxton, UK
- MP 537 **Identification and Label-Free Quantification of Archaeon "Ghost" Proteins**; Nalaka Rannulu¹; Deborah R. Francoleon¹; Jonathan Erde¹; Anne Henstra¹; Lars Rohlin¹; Robert P. Gunsalus¹; Michael Daly²; Rachel O. Loo¹; Joseph A. Loo¹; ¹UCLA, Los Angeles, CA; ²Waters Corp, Oakland, CA
- MP 538 **Characterizing the Novel Flagellin and Pilin Glycoproteins Expressed by the Archaeon, *Methanococcus Maripaludis***; John F. Kelly¹; Evgueny Vinogradov¹; Sandy Ng²; Divya Nair²; John Wu²; Luc Tessier¹; Anna Robotham¹; Kaoru Uchida³; Susan Logan¹; Shin-Ichi Aizawa³; Ken Jarrell²; ¹National Research Council of Canada, Ottawa, Canada; ²Queen's University, Kingston, Ontario, Canada; ³Prefectural University of Hiroshima, Hiroshima, Japan
- MP 539 ***Escherichia coli* Exhibits a Membrane Related Response to a Small Arginine- and Tryptophan-rich Antimicrobial Peptide**; Benjamin Fränzel; Dirk Wolters; Analytical Chemistry, University of Bochum, Bochum, Germany
- MP 540 **The Secretome of *Streptococcus pneumoniae***; Shobha Ravipaty¹; Lokto Sham²; Malcolm E. Winkler²; James P. Reilly¹; ¹Department of Chemistry, Indiana University, Bloomington, IN; ²Department of Biology, Indiana University, Bloomington, IN
- MP 541 **Genomic and Proteomic Analyses of Respiratory Viruses**; Kai Tang; Nanyang Technological University, Singapore, Singapore
- MP 542 **In-vivo MS Profiling and Imaging of a Growing Bacterial Colony Directly from Nutrient Agar using nanoDESI Mass Spectrometry**; Jeramey Watrous¹; Brandi Heath²; Patrick Roach²; Julia Laskin²; Pieter Dorrestein³; ¹University of California, San Diego, La Jolla, CA; ²Pacific Northwest National Lab, Richland, WA; ³University of California, San Diego, Skaggs School, La Jolla, CA
- MP 543 **Rapid Detection of Polymicrobial Composition Pathogenic Bacterial Cultures using Secondary Electrospray Ionization-mass Spectrometry (SESI-MS)**; Jiangjiang Zhu; Heather Bean; Yin-Ming Kuo; Jane Hill; University of Vermont, Burlington, VT
- MP 544 **Thermal Desorption-Gas Chromatography-Mass Spectrometry Characterization of Novel Microbial Volatile Organic Compounds Produced by *Chaetomium* and *Cladosporium* Molds**; Syeda S. Quadri¹; Michael J. Ferris²; Jim E. Cutler²; Richard B. Cole¹; ¹University of New Orleans, New Orleans, LA; ²Children's Hospital, New Orleans, LA
- MP 545 **Simultaneously Analysis of Cardiolipin and Lipid A from *Helicobacter pylori*: Structure Alteration under ex vivo Gastric Conditions**; Jianjun Li; Ping Zhou; Rui Hu; Vandana Chandan; Wangxue Chen; Rhonda KuoLee; Eleonora Altman; National Research Council, Ottawa, Canada
- MP 546 **Microorganism Detection by MALDI in the Presence of Interferents**; Juaneka Hayes; Kermit K. Murray; Louisiana State University, Baton Rouge, LA
- MP 547 **A Novel Test for Rapid Diagnosis of MRSA (Meticillin Resistant *Staphylococcus aureus*) using Mass Spectrometry (MS)**; Pranav Somaiya¹; Michael Charlesworth²; Steve Davies³; Valerie Edwards-Jones¹; ¹NPIMR-UCL, London, UK; ²Leeds Teaching Hospitals NHS Trust, Leeds, UK; ³Sheffield Teaching Hospitals NHS Trust, Sheffield, UK
- MP 548 **Rapid Identification of *Acinetobacter* Species with Nanodiamond**; Chih-Jen Yeh¹; Chun-Wei Chen¹; Kai-Chih Chang²; Wen-Ping Peng¹; ¹National Dong Hwa University, Shoufeng, Hualien, TAIWAN; ²Tzu Chi University, Hualien, Taiwan
- MP 549 **Rapid Discrimination of Methicillin-resistant and Vancomycin-intermediate *Staphylococcus aureus* from Methicillin-sensitive *Staphylococcus aureus* Strains by MALDI-TOF**; Chao-Jung Chen^{1,2}; Fuu-Jen Tsai^{1,2}; Yu-Ching Liu²; Cheng-Mao Ho²; Jang-Jih Lu^{1,2}; ¹China Medical University, Taichung, Taiwan; ²China Medical University Hospital, Taichung, Taiwan
- MP 550 **Detection of pathogens in nymphal ticks from the Czech Republic using PCR/ESI-MS**; Chris Crowder¹; Megan Rounds¹; Heather Matthews¹; Vaclav Honig²; Libor Grubhoffer²; Dave Ecker¹; Benjamin Luft³; Mark Eshoo¹; ¹Ibis Biosciences, Carlsbad, CA; ²Institute of Parasitology, Ceske Budejovice, Czech Republic; ³SUNY at Stony Brook, Stony Brook, NY
- MP 551 **Development and Validation of a Broad Biothreat (BT) Identification Strategy using PCR/ESI-MS**; Ranga Sampath¹; Niveen Mulholland²; Courtney Harter²; Nicole Waybright²; Robert Lovari¹; Debora Rubio-Aparicio¹; Mark Frinder¹; Irene Yasuda¹; Feng Li¹; Roberta Housley¹; Thomas Hall¹; Steven Hofstadler¹; Christian Massire¹; Lawrence Blyn¹; David Ecker¹; ¹Ibis Biosciences, Inc., Carlsbad, CA; ²Midwest Research Institute, Rockville, MD
- MP 552 **RT-PCR/ESI-MS for Simultaneous Rapid Detection of Biothreat (BT) and Common Respiratory Pathogens in Bronchoalveolar Lavages (BALs)**; Kevin Jeng¹; Helen Won¹; Lawrence Blyn²; Stephen Peterson¹; Justin Hardick¹; Alexandria Valsamakis¹; Richard Rothman¹; Charlotte Gaydos¹; Karen Carroll¹; ¹Johns Hopkins University, Baltimore, MD; ²Ibis Biosciences, Carlsbad, CA
- MP 553 **The Development of a Mass Coding based Pathogen Detection Platform for Clinical Research**; Gavin Fischer¹; Craig Monell¹; Natalia Novorodovskaya¹; Scott Basehore¹; Dan-Hui Dorothy Yang¹; Yves Konigshofer²; Michelle Cayouette¹; Sarah Hamilton¹; Yuan Shau¹; Yoon Rhee¹; Katie Felts¹; Denise Rhodes¹; Carsten Carstens¹; Roger H. Taylor¹; Marilyn Marx²; Lynde Nottebaum¹; Anding Fan²; Yinghang Yang²; Holly

- Hogrefe¹; ¹Agilent Technologies, La Jolla, CA; ²Agilent Technologies, Santa Clara, CA
- MP 554 **Application of Mass Spectrometry as a Confirmatory Tool for *Shigella* Pathogen Identification**; Philippe Raymond; Karine Seyer; Sylvianne Paul; Canadian Food Inspection Agency, St-Hyacinthe, Canada
- MP 555 **Celiac Disease - Fast and Efficient SRM Based LC/MS/MS Method for Measuring Gluten Peptide Degradation for Screening of Probiotic Bacteria**; Kenzi Clark²; Jens Walter²; Sam Sajid¹; M.P. Nandakumar¹; ¹University of Nebraska Lincoln, RBC, Lincoln, NE; ²Food Science, University of Nebraska Lincoln, Lincoln, NE
- MP 556 **Combining UV Absorbance and Diagnostic CID Fragment Ions to Identify and Distinguish Isobaric Chromophores on Phycobiliproteins**; Loubna Hammad¹; Animesh Shukla³; Avijit Biswas²; Yuening Zhang¹; David Kehoe³; Wendy Schluchter²; Jonathan A. Karty³; ¹METACyt Biochemical Analysis Center, Indiana Univ, Bloomington, IN; ²University of New Orleans, New Orleans, LA; ³Indiana University, Bloomington, IN
- INTACT PROTEINS: SEQUENCE ANALYSIS, 557 - 572**
- MP 557 **Structural Characterization of 150 kDa Intact Antibodies with Electron Transfer Dissociation Orbitrap Mass Spectrometry**; Yury O. Tsybin¹; Eugen Damoc²; Luca Fornelli¹; Sasa M. Miladinovic¹; Dirk Nolting²; Martin Zeller²; Eric Grouzmann³; Alexander Makarov²; ¹Ecole Polytechnique Federale, Lausanne, Switzerland; ²Thermo Fisher Scientific, Bremen, Germany; ³Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland
- MP 558 **Unit Mass Resolution for a 148 kDa Intact Therapeutic Monoclonal Antibody by FT-ICR Mass Spectrometry**; Santosh G. Valeja^{1,2}; Nathan Kaiser¹; Feng Xian^{1,2}; Mark R. Emmett^{1,2}; Chris Hendrickson^{1,2}; Jason Rouse³; Alan G. Marshall^{1,2}; ¹ICR Program, Nat'l High Magnetic Field Laboratory, Tallahassee, FL; ²Department of Chemistry, Florida State University, Tallahassee, FL; ³Pfizer BioTherapeutics, Andover, MA
- MP 559 **De Novo Sequencing of Swine Cardiac Troponin T (>35 kDa) by Top-Down Mass Spectrometry**; Han Zhang; Jiang Zhang; Huseyin Guner; Timothy A. Hacker; Ying Ge; University of Wisconsin-Madison, Madison, WI
- MP 560 **Improving Protein Analysis in Orbitrap Mass Spectrometry**; Eugen Damoc; Eduard Denisov; Oliver Lange; Thomas Moehring; Alexander Makarov; ThermoFisher Scientific, Bremen, Germany
- MP 561 **Top-Down ESI Mass Spectrometry of Supercharged Proteins**; Jiang Zhang¹; Jeremy Wolff²; Joseph A. Loo¹; ¹UCLA, Los Angeles, CA; ²Bruker Daltonics, Billerica, MA
- MP 562 **Integrated Top-down and Bottom-up Proteomics of Natural Abundant and Heavy Isotope Depleted *Saccharomyces cerevisiae* using LC-FT-ICR and LC-Ion Trap MS**; Qian Liu¹; Jennifer S. Cobb²; Jared R. Auclair¹; Joseph Salisbury¹; Michael Easterling³; Jeffrey Agar¹; ¹Brandeis University, Waltham, MA; ²Novartis Institutes for BioMedical Research, Maynard, MA; ³Bruker Daltonics, Inc., Billerica, MA
- MP 563 **De Novo Sequencing of an Antibody Using 157 nm Photofragmentation**; Puja Gandhi; James P. Reilly; Indiana University, Bloomington, IN
- MP 564 **Does LC Separation of Intact Proteins Hinder Identification of Bacterial Markers?**; Melinda A. McFarland; Denis Andrzejewski; John H. Callahan; Steven M. Musser; FDA-CFSAN, College Park, MD
- MP 565 **A Method Based on Microwave-Assisted Acid Hydrolysis, LC Fractionation and MALDI and ESI MS for Protein Terminal Sequence Analysis**; Lu Chen; Nan Wang; Liang Li; Chemistry Department, University of Alberta, Edmonton, AB
- MP 566 **By-products in Recombinant TAU Protein Production Characterized by LC-MALDI Top-Down Sequencing (LC-MALDI-TDS)**; Arndt Asperger¹; Marcus Macht¹; Branislav Kovacech²; Andrej Kovac²; ¹Bruker Daltonik GmbH, Bremen, Germany; ²Inst. of Neuroimmunol., Slovak Academy of Sciences, Bratislava, SK
- MP 567 **Pseudo MS4 Fragmentation Processes of Entire High Mass Proteins in a High Vacuum MALDI Iontrap TOF Mass Spectrometer**; Omar Belgacem¹; Mathew E. Openshaw¹; Lina Sellami²; Benjamin J. Figard³; Claude Villard²; Daniel Lafitte²; ¹Shimadzu, Kratos, Manchester, UK; ²Plateforme Protéomique, Université Aix-Marseille, Marseille, France; ³Shimadzu Scientific Instruments, Huston, TX
- MP 568 **A-, B-, C-, D-, W-, Y- and Z-type Ions Generated Simultaneously by MALDI In-Source Decay**; Kai Scheffler¹; Tabiwan Arrey²; Kerstin Strupat²; ¹Thermo Fisher Scientific GmbH, Dreieich, Germany; ²Thermo Fisher Scientific GmbH, Bremen, Germany
- MP 569 **Top-Down Proteomics of Protein Mixtures using MALDI-In Source Decay with Software to Simultaneously Sequence Multiple Proteins**; Tyler A. Zimmerman¹; Gabriel D Mazzucchelli²; Delphine Debois¹; Edwin De Pauw³; ¹University of Liege, Liège, Belgium; ²MS Lab, GIGA, Liege, Belgium; ³Liege University, Liege, Belgium
- MP 570 **Protein Sequence and Size Variation Effects on MALDI In-Source Decay Fragmentation Efficiency**; Huiling Liu; Ben Bolanos*; Michael Greig; Pfizer Global R&D- La Jolla, San Diego, CA
- MP 571 **A Rapid and Universal Approach to the Verification of Protein Termini Using In-source Decay**; Yutian Gan; Corey Bakalarski; Peter Liu; Jennie Lill; Wendy Sandoval; Genentech, Inc., South San Francisco, CA
- MP 572 **Single-scan, Top-down Intact Protein Analysis on a Velos Orbitrap Modified with a Dedicated High-capacity Ion/Ion Reaction Cell**; Jason D. Russell¹; Aaron R. Ledvina¹; Graeme C. McAlister¹; Michael S. Westphall¹; John E. P. Syka²; Jens Griep-Raming³; Joshua J. Coon¹; ¹University of Wisconsin, Madison, WI; ²Thermo Fisher Scientific, San Jose, CA; ³Thermo Fisher Scientific GmbH, Bremen, Germany
- RECOMBINANT PROTEINS: QUALITATIVE ANALYSIS, 573 - 574**
- MP 573 **Stability Evaluation of HIV Type 1 Protease Constructs by High-Resolution Mass Spectrometry**; Ian Mitchell S. De Vera¹; Gail E.

Fanucci¹; Maria Cristina A. Dancel^{1,2}; ¹Department of Chemistry, University of Florida, Gainesville, FL; ²Mass Spectrometry Facility, University of Florida, Gainesville, FL

- MP 574 **Efficient and Rapid Multienzymatic Limited Digestion Method for Complete Protein Characterization;** Gabriel Mazzucchelli¹; Nicolas Smargiasso¹; Marie-Alice Meuwis¹; Michel Degueldre¹; Laurent Leclercq²; Edwin De Pauw¹; ¹University of Liege, MS Lab - GIGA, Liege, Belgium; ²Johnson & Johnson Pharmaceutical R&D, Beerse, Belgium

PROTEOMICS: SEPARATION, 575 - 583

- MP 575 **A Novel Two-Dimensional LC/MS/MS Approach For Automated Analysis of Complex Protein Samples Using Ms Compatible Buffers;** Paul Shieh¹; May Xu¹; Christine Miller²; Ken Miller²; ¹Column Technology Inc., Fremont, CA; ²Agilent Technologies, Santa Clara, CA
- MP 576 **Elevated Temperature Separation Improves the Depth and Quality of LC-MS-based Analysis of Proteome Digests, PTMs, and Mixtures of Intact Proteins;** Eugene Moskovets²; Jane Razumovsky²; Emily Freeman¹; Alexander R. Ivanov¹; ¹Harvard University HSPH, Boston, MA; ²S.E.S.I., Columbia, MD
- MP 577 **Secondary Analysis of SPR Based Arrays by Direct Use in a MALDI Time of Flight Mass Spectrometer;** Steve Roth¹; Fiona Plows²; Matthew Hammond³; ¹Bio-Rad Laboratories, Inc, Hercules, CA; ²Bio-Rad Laboratories, Inc., Hercules, CA; ³Stanford University, Stanford, CA
- MP 578 **Integrated Strong-Cation Exchange Liquid Chromatographic Procedure for SDS Removal and Peptide Separation for MS-Based Shotgun Proteome Analysis;** Difei Sun; Nan Wang; Liang Li; Department of Chemistry, University of Alberta, Edmonton, Canada
- MP 579 **Development of Multidimensional RPLC-RPLC Separation at the Protein and Peptide Levels Combined with ESI-MS/MS for Comprehensive Mapping of the Phosphoproteome;** Xiaoxia Ye; Liang Li; University of Alberta, Edmonton, CANADA
- MP 580 **Porous Graphitic Carbon: A Novel Application as a First-dimension Stationary Phase in the 2D-LC-MS/MS Analysis of Complex Peptide Mixtures;** John R. Griffiths¹; Simon Perkins¹; Yvonne Connolly¹; Lu Zhang¹; Valeria Barattini²; Luisa Pereira²; Anthony Edge²; Harald Ritchie²; Duncan Smith¹; ¹Paterson Institute for Cancer Research, Manchester, UK; ²Thermo Fisher Scientific, Runcorn, UK
- MP 581 **Effects of Fractionation on Protein Identifications by Online 2D-UPLC-MS/MS;** Stephane Houel¹; Robert Abernathy²; Scott A. Stuart²; Chia-Yu Yen²; Karen Meyer-Arendt²; William M. Old²; Natalie G. Ahn^{1,2}; ¹Howard Hughes Medical Institute, Boulder, CO; ²University of Colorado at Boulder, Boulder, CO
- MP 582 **Proteomic Exploration of Cyclic Peptide Diversity Among Plants Using Peptide Labelling and Orthogonal Separation Strategies;** Aaron Poth^{1,2}; Michelle Colgrave²; David Craik¹; ¹IMB, The University of Queensland, St Lucia, Australia; ²CSIRO Livestock Industries, St Lucia, Australia

- MP 583 **Separation and Mass Spectrometry of Tryptic Peptides at Low and High pH;** Mark J. Raftery; Bioanalytical Mass Spectrometry, Sydney, Australia

PROTEOMICS: NEW APPROACHES – INSTRUMENTATION; 584 - 603

- MP 584 **Reduction of Co-Fragmented Peptides by Ion Mobility to Improve Peptide Identification and Quantitation;** Keith Fadgen; Martha Stapels; Scott Geromanos; Jim Langridge; Waters Corporation, Milford, MA
- MP 585 **Ion Mobility-Assisted Data Independent Analysis with Inter-Analysis Alignment Provides Improved Depth of Proteome Coverage;** J. Will Thompson¹; Scott Geromanos²; Martha D. Stapels²; Laura G Dubois¹; Keith Fadgen²; Cindy Chepanoske³; Erik J Soderblom¹; M. Arthur Moseley¹; ¹Duke University School of Medicine, Durham, NC; ²Waters Corporation, Milford, MA; ³Ceiba Solutions, Seattle, WA
- MP 586 **Quantitative Proteomics via Laser Desorption Photoionization Mass Spectrometry: Proof of Principle Study using iTRAQ Tagging;** Artem Akhmetov¹; Praneeth Edirisinghe²; Jerry F. Moore³; Melvin Blaze M. T.¹; Luke Hanley¹; ¹University of Illinois at Chicago, Chicago, IL; ²Rush University Medical Center, Chicago, IL; ³MassThink LLC, Naperville, IL
- MP 587 **A Novel Proteomics Approach to Quantitative Direct Sample Infusion: Rapid Protein Identification and Quantification Using Data-Independent Acquisition;** John D Chapman; J. Scott Edgar; Jason L. Shaw; David R. Goodlett; University of Washington, Seattle, WA
- MP 588 **Non-assumptive Identification of Protein Modifications using High Resolution-high Speed Quadrupole TOF-MS/MS Analysis;** Lekha Sleno¹; Xu Guo²; Souade Ben Haddou¹; Stephen A. Tate²; Brigitte Simons²; ¹UQAM, Montreal, Canada; ²AB SCIEX, Concord, ON
- MP 589 **Optimizing High Performance at Highest Speeds for Protein Identification in Complex Matrices;** Eric Johansen^{1,2}; Xu Guo^{1,2}; Scott Stuart³; Sahana Mollah^{1,2}; Sean Seymour^{1,2}; Doug Simmons^{1,2}; Christie Hunter^{1,2}; ¹AB SCIEX, Foster City, CA; ²AB SCIEX, Toronto, Canada; ³University of Colorado at Boulder, Boulder, CO
- MP 590 **In-Funnel Orthogonal Ion Injection for Highly Sensitive Pulsed-SRM Analysis of Biological Samples;** Ruwan Kurulugama; Vlad Petyuk; Joseph Brown; Karl Weitz; Richard D. Smith; Mikhail Belov; Pacific Northwest National Laboratories, Richland, WA
- MP 591 **An Ion-overfilling Approach that Significantly Improves the Sensitivity of Orbitrap and Application in Highly Sensitive and Accurate Proteomic Profiling;** Jun Qu; Xiaotao Duan; Frank Engler; University at Buffalo, Amherst, NY
- MP 592 **Calibration of MALDI-TOF-TOF for MS/MS of Non-digested Proteins for Top-down Proteomic Identification;** Clifton K. Fagerquist; Omar Sultan; USDA, Albany, CA
- MP 593 **A Top-Down/Bottom-Up Approach for the Differential Proteomic Analysis of a Beta-Arrestin 1,2 Double-Knockout;** Jordan Stobaugh¹; Kaitlin Fague¹; Brenna Richardson²; Kunhong Xiao²; James Jorgenson¹; ¹University of

- North Carolina at Chapel Hill, Chapel Hill, NC;
²Duke University, Durham, NC
- MP 594 **A Combined Top-down and Bottom-up Proteomics Approach to Detect and Identify Disease Related IgGs;** Lennard Dekker¹; Si Wu²; Martijn Vanduijn¹; Nikolai Tolic²; Theo Marten Luider¹; Ljiljana Pasa-Tolic²; ¹Erasmus Medical Center, Rotterdam, Netherlands; ²Pacific NW Nat'l Lab, Richland, WA
- MP 595 **Efficient Top Down of Yeast Proteins under 70 kDa using a Combination of Dissociation Techniques with LTQ-FT and Orbitrap Instruments;** John F. Kellie¹; Philip Compton¹; Kenneth R. Durbin¹; Shannon M Eliuk²; Vlad Zabrouskov²; Neil L. Kelleher¹; ¹Northwestern University, Evanston, IL; ²Thermo Scientific, San Jose, CA
- MP 596 **(SWATH) A Method For Collecting MSMS of All Parent Ions in a Sample on an LC Time Scale;** Stephen A. Tate¹; Alexander Loboda¹; Igor Chernushevich¹; Ludovic Gillet²; Pedro Navarro²; Ron Bonner¹; Ruedi Aebersold²; ¹AB SCIEX, Concord, Canada; ²ETH Zurich, Zurich, Switzerland
- MP 597 **Matrix-Assisted Inlet Ionization (MAII) Methods For Protein Characterization And Modification Sites Using A Bottom Up Approach;** Darrell D. Marshall; Alicia L. Richards; Ellen D. Inutan; Sarah Trimpin; Wayne State University, Detroit, MI
- MP 598 **Increasing LCMS Assay Robustness through Increased Specificity using High Resolution MRM-like Analysis;** Christie L. Hunter¹; Hasmik Keshishian²; Steven A. Carr²; ¹AB SCIEX, Foster City, CA; ²Broad Institute, Cambridge, MA
- MP 599 **Using Fragmentation at Different Collision Energies for Automated De Novo Sequencing of Peptides in Proteomics;** Miguel Garcia¹; Cesar Costa Vera¹; André M. Deelder²; Magnus Palmblad²; ¹Escuela Politécnica Nacional / Dept. de Física, Quito, Ecuador; ²Leiden University, Leiden, Netherlands
- MP 600 **Increased Throughput for Quantitative Proteomics by Combining Data-independent Acquisition with Accelerated Online 2D-LC;** Richard R. Sprenger¹; Angel Manteca²; Ole N. Jensen¹; ¹University of Southern Denmark, Odense, Denmark; ²Universidad de Oviedo, Oviedo, Spain
- MP 601 **Nanomanipulation-Nanospray Ionization-Mass Spectrometry Coupled to Raman Microscopy to Elucidate Astaxanthin-Protein Interaction in Freshwater Copepods;** Nicole Wallace; student, Lewisville, TX
- MP 602 **DBNovo: Information Based Control of Mass Spectrometers for Real-time Analysis of Biopolymers;** Andreas Kühn²; Katja Tham²; Stephan Heymann¹; Johann-Christoph Freytag¹; Michael W. Linscheid¹; ¹Humboldt-Universität zu Berlin, Berlin, Germany; ²Thermo Fisher Scientific, Bremen, Germany
- MP 603 **Multiplexing SIMs on a Novel Bench Top Orbitrap with a Quadrupole Mass Filter to Increase Sensitivity for Peptide Quantitation;** Jonathan C. McNally; ThermoFisher Scientific, San Francisco, CA
- PROTEOMICS: PROTEIN COMPLEXES, 604 - 622**
- MP 604 **New Methodology to Detect Peptide Toxin-GPCR Interaction by MALDI-TOF Mass Spectrometry;** Julien Echterbille¹; Nicolas Gilles²; Edwin De Pauw¹; Loic Quinton¹; ¹University of Liege - Labo. Spectrometrie de Masse, Liege, Belgium; ²IBiTecS, SIMOPRO - CEA, Gif Sur Yvette, France
- MP 605 **Application of a SUPREX-based H/D Exchange Protocol for Thermodynamic Analysis of a Molecular Chaperone Binding to its Unfolded Protein Substrate;** Ying Xu¹; Dana Reichmann²; Ursula Jakob²; Michael C. Fitzgerald¹; ¹Duke University, Durham, NC; ²University of Michigan, Ann Arbor, MI
- MP 606 **Structural Details of NKR-P1D / Clrb Interaction Elucidated by Chemical Cross-linking and High Resolution Mass Spectrometry;** Pavel Hanc¹; Daniel Rozbesky^{1,2}; Josef Chmelik¹; Karel Bezouska^{1,2}; Petr Man^{1,2}; Petr Novak^{1,2}; ¹Institute of Microbiology, Prague, Czech Republic; ²Faculty of Sciences, Charles University, Prague, Czech Republic
- MP 607 **Using FAIMS-FTICR/MS to Determine the Effectiveness of a Novel Crosslinker in Identifying Protein-Peptide Interactions Sites;** Melissa Stoudemayer¹; Rachel Parker¹; Ruth Furukawa¹; Marcus Fecheimer¹; Evgeniy V. Petrotchenko²; Christoph H. Borchers²; Jon Amster¹; ¹University of Georgia, Athens, GA; ²UVic-GBC Proteomics Centre, Victoria, BC
- MP 608 **Mass Spectrometry of Immunodepleted Plasma Derived Human Serum Albumin to Identify Proteins and Metabolites Non-Specifically Bound to Albumin;** Christopher Vanselow¹; Vadiraja Bhat²; Sunia Trauger³; Julian Whitelegge⁴; ¹Agilent Technologies, La Jolla, CA; ²Agilent Technologies, Little Falls, DE; ³The Scripps Research Institute, La Jolla, CA; ⁴University of California LA, Los Angeles, CA
- MP 609 **Proteomics Approach to Identify the Interactome of Valosin-Containing Protein (VCP) in Helicobacter pylori Infected AGS cells;** Lu-Ping Chow; Cheng-Chou Yu; Yen-Ching Chang; Institute of Biochemistry & Molecular Biology, Taipei, Taiwan
- MP 610 **Tracking and Filtering Interaction Proteomics Data: ProHits, SAINT and the Total Contaminant Repository for Affinity Purification;** Hyungwon Choi^{1,2}; Guomin Liu³; Datta Mellacheruvu¹; Brett Larsen³; Jianping Zhang³; Mike Tyers^{3,4}; Alexey Nesvizhskii¹; Anne-Claude Gingras³; ¹University of Michigan, Austin, TX; ²National University of Singapore, Singapore, Singapore; ³Samuel Lunenfeld Research Institute, Mount Sinai H, Toronto, Canada; ⁴University of Edinburgh, Edinburgh, UK
- MP 611 **Characterization of ITAM Peptide Probes Based on Competitive Assay and Quantitative Proteomics;** Lianghai Hu¹; Andrew Lipchik²; Ziniu Zhou¹; Laurie Parker²; Weiguo Andy Tao^{1,2}; ¹Department of Biochemistry, Purdue University, West Lafayette, IN; ²Department of MCMP, Purdue University, West Lafayette, IN
- MP 612 **A Proteomic Approach Reveals a Conserved β-Methylthiolated Loop on E. coli Ribosomal Protein S12 to be a Protein Binding Interface;** Michael Brad Strader¹; William Judson Herve IV²; Suwako Fujigaki¹; Cai Yun Chen¹; Nina Costantino³; Anthony J. Makusky¹; Donald L. Court³; Sanford P. Markey¹; Jeffrey A. Kowalak¹;

- ¹National Institutes of Health, Bethesda, MD;
²Naval Research Laboratory, Washington, DC;
³National Cancer Institute, Frederick, MD
- MP 613 **Phosphorylation-dependent Protein-Protein Interaction by Quantitative Proteomics;** Lingfei Zeng¹; Jacob Galan²; Robert Geahlen¹; Andy Tao²; ¹Department of MCMP, Purdue, West Lafayette, IN; ²Department of Biochemistry, Purdue University, West Lafayette, IN
- MP 614 **Pre-synaptic Protein Complexes Identified by Interaction Proteomics;** Ning Chen; Patricia Klemmer; Roel C. van der Schors; Ruud Toonen; Matthijs Verhage; August B. Smit; Ka Wan Li; *VU University Amsterdam, Amsterdam, Netherlands*
- MP 615 **Mass Spectrometry Analysis of Complex Formation of MRJP1 and Brain Proteins from the Honey Bee *Apis mellifera*;** Gabriel C. N. Cruz; Carlos André O. Ricart; Jaime M. Santana; Marcelo Valle de Sousa; *University of Brasília, Brasília, Brazil*
- MP 616 **Compositional Analysis of the Merozoite Surface Protein-1 Complex of *Plasmodium falciparum* using Blue Native PAGE and Protein Correlation Profiling;** Nicole Sessler¹; Karsten Krug¹; Mirita Franz-Wachtel¹; Benjamin Mordmüller²; Boris Macek¹; ¹Proteome Center Tuebingen, University of Tuebingen, Tuebingen, Germany; ²Institute of Tropical Medicine, Univ. of Tuebingen, Tuebingen, Germany
- MP 617 **Using Mass Spectrometry to Identify the Components of the Erythromycin-Induced 50S Ribosomal Subunit Assembly Particle in *Escherichia coli*;** Romel Dator; Patrick A. Limbach; *University of Cincinnati, Cincinnati, OH*
- MP 618 **Characterization of Ca²⁺-binding Calmodulin Complexes with Peptides using LC-FTMS;** Issey Osaka¹; Hiroki Fujimori²; Akiko Nakatomi³; Shin-ya Ohki¹; Hideya Kawasaki²; Ryuichi Arakawa²; ¹Japan Advanced Institute of Science and Technology, Nomi, Ishikawa, Japan; ²Kansai University, Suita, Osaka, Japan; ³Hokkaido University, Sapporo, Hokkaido, Japan
- MP 619 **Characterization and Function of the Tbx20 Cardiac Transcriptional Complex;** Erin Kaltenbrun¹; Todd Greco²; Ileana M. Cristea²; Frank Conlon¹; ¹University of North Carolina, Chapel Hill, NC; ²Princeton University, Princeton, NJ
- MP 620 **A Proteomics Characterization of VP26 Capsid Protein during Herpes Simplex Virus Type 1 Assembly;** Daniell L. Rowles; Todd M. Greco; Aaron E. Lin; Ileana M. Cristea; *Princeton University, Princeton, NJ*
- MP 621 **Dynamic Protein Interactomes of Human Interferon Inducible HIN200 Proteins;** Tuo Li; Benjamin A. Diner; Leslie Alexis; Ileana M. Cristea; *Princeton University, Princeton, NJ*
- MP 622 **Distinguishing Between Copper- and Zinc-bound Superoxide Dismutase using Isotope Enrichment and High Resolution Mass Spectrometry;** Timothy Rhoads; Nathan Lopez; Jared Williams; Jeffrey Morre; Joseph Beckman; *Oregon State University, Corvallis, OR*
- PROTEINS: COVALENT LABELING, 623 - 633**
- MP 623 **Conformational Transitions of Apo-Myoglobin Probed by Hydroxyl Radical Labeling and Mass Spectrometry;** Siavash Vahidi; Yalda Liaghati Mobarhan; Lars Konermann; *University of Western Ontario, London, Canada*
- MP 624 **Optimization of Purification Protocol for LC-MS/MS Analysis of Click Chemistry-modified Peptides in Complex Protein Samples;** André LeBlanc; Tze Chieh Shiao; René Roy; Lekha Sleno; *UQAM, Montréal, Canada*
- MP 625 **Selective Enrichment and Analysis of Protein N-termini by Chemical Dimethylation;** Yuan Gao; Li-Rong Yu; *National Center for Toxicological Research, US FDA, Jefferson, AR*
- MP 626 **Investigation of the Interaction between *E. coli* Alanine-tRNA Synthetase with tRNA^{ala} and other Ligands by Mass Spectrometry;** Jingshu Guo; John D. Dignam; Wendell P. Griffith; *University of Toledo, Toledo, OH*
- MP 627 **Preferential ETD Cleavage for Facile Mapping of Protein Surface Residue Accessibility;** Lisa Vasicek; John O'Brien; Jennifer Brodbelt; *The University of Texas, Austin, TX*
- MP 628 **Scrambling of Covalently Labeled Amino Acids During CID;** Nicholas Borotto; Yuping Zhou; Richard Vachet; *University of Massachusetts, Amherst, MA*
- MP 629 **Mass Spectrometry Studies of DNA-protein Cross-linking by Cisplatin;** Xun Ming; Colin Campbell; Erin Michaelson; Natalia Tretyakova; *University of Minnesota, Minneapolis, MN*
- MP 630 **Watching Amino Acid Residues Change during Protein Fast Folding;** Jiawei Chen; Don L. Rempel; Michael L. Gross; *Washington University, St. Louis, MO*
- MP 631 **Does Chemical Cross-Linking Distort the Protein? - Investigations Using Hydrogen-Deuterium Exchange and Ion Mobility Mass Spectrometry;** Adam Klein^{1,2}; Derrick L. Morast^{1,2}; R. Sam Houk^{1,2}; Young Jin Lee^{1,2}; ¹Iowa State University, Ames, IA; ²US-DOE Ames Laboratory, Ames, IA
- MP 632 **Probing the Structure of Amyloid β -Protein Monomer and Dimer using Radiolytic Labeling and Mass Spectrometry;** Eric Pang^{1,3}; Margaret Condron³; Sayan Gupta²; Mark Chance²; David B. Teplow³; Joseph A. Loo^{1,3}; ¹UCLA, Los Angeles, CA; ²Case Western Reserve University, Upton, NY; ³David Geffen School of Medicine, Los Angeles, CA
- MP 633 **Influence of Phosphate Concentration on DOTA-NHS Conjugation of an IgG 1 mAb;** David Hambly; Keith Bower; Anna Senczuk; Janet Tam; Art Hewig; Peter Prince; Himanshu Gadgil; *Amgen Inc., Seattle, WA*
- BIOMOLECULAR STRUCTURE ANALYSIS: COVALENT LABELING, 634 - 651**
- MP 634 **Structural Characterization of Short-Lived Intermediates During Protein Folding and Assembly by Pulsed Oxidative Labeling and ESI-MS;** Bradley B. Stocks¹; Patrick Wintrode²; Lars Konermann¹; ¹Univ. of Western Ontario, London, ON; ²Case Western Reserve University, Cleveland, OH
- MP 635 **Increasing Protein Structural Information during Covalent Labeling with Mass Spectrometric Detection;** Yuping Zhou; Richard Vachet; *University of Massachusetts, Amherst, MA*
- MP 636 **Protein hydroxyl-radical Footprinting on Protein-protein and Protein-RNA Sub-complexes of the Spliceosome;** Romina Hofele;

- Carla Schmidt; Henning Urlaub; *Max Planck Institute for Biophysical Chemistry, Goettingen, Germany*
- MP 637 **Thermodynamic Analysis of Proteins in Multi-Component Mixtures using a Lysine Amidation Protocol and MS-Based Proteomics**; Irene N. Falk; Ying Xu; Michael C. Fitzgerald; *Duke University, Durham, NC*
- MP 638 **Fast Photochemical Oxidation of Proteins for the Analysis of Macromolecular Complexes**; Lisa M. Jones; Michael L. Gross; *Washington University, St. Louis, MO*
- MP 639 **Laser-Initiated Carbene Footprints for Structural Proteomics: An investigation of Reaction Selectivity**; Channele C. Jumper; *University of Calgary, Calgary, Canada*
- MP 640 **X-ray Footprinting Initiatives to Study Ion Channels at CSB: A National Resource for Radiolytic Labeling and Mass Spectrometry**; Sayan Gupta¹; Vassiliy Bavro²; Rhijuta D'Mello¹; Alexis Ramos¹; Catherine Vénien-Bryan²; Stephen Tucker²; Mark Chance¹; ¹Case Western Reserve University, Upton, NY; ²University of Oxford, Oxford, UK
- MP 641 **Precision of a Covalent Labeling Strategy for the Thermodynamic Analysis of Protein Folding and Stability in Complex Mixtures**; Erin C. Strickland¹; Patrick D. DeArmond¹; Lindsay N. Deis²; Porsha L. Shaw²; Jiyong Hong¹; Michael C. Fitzgerald^{1,2}; ¹Chemistry Dept., Duke University, Durham, NC; ²Biochemistry Dept., Duke University Medical Center, Durham, NC
- MP 642 **Probing the Mechanism of Calmodulin-mediated Activation of eNOS by Structural Mass Spectrometry**; Janna Kiselar¹; Kulwant Aulak²; Zhihao Yu²; Mark Chance¹; Dennis Stuehr²; ¹Case Western Reserve Univ, Cleveland, OH; ²Cleveland Clinic, Cleveland, OH
- MP 643 **Targeted Mass Spectrometry and Chemical Labeling for Quantitative Validation of Predicted Protein Surface**; Vahid Farrokhi; Bekim Bajrami; Xudong Yao; *University of Connecticut, Storrs, CT*
- MP 644 **Structural Characterization of Human apolipoproteinE3 and E4 Variants in their Interaction with Amyloid Beta42 as Determined by FPOP and MS**; Brian C. Gau¹; Kanchan Garal²; Carl Frieden²; Michael Gross¹; ¹Washington University, St. Louis, MO; ²Washington University School of Medicine, St. Louis, MO
- MP 645 **Determining Lysozyme Structure Using Reductive Methylation, Nuclear Magnetic Resonance, and Mass Spectrometry**; Michelle Sweeney; Kevin Roberson; Maggie Thomasson; Megan Macnaughtan; *Louisiana State University, Baton Rouge, LA*
- MP 646 **Methylene Labeling while Electrospraying Protein/Peptide Complexes- A New Mass Spectrometry-based Process for Obtaining Information about Biomolecule Interactions**; Paul Martino; Daniel Therrien; Douglas Steiner; Jonathan Burden; Jacob Harris; Patrick Ingham; Nicole Therrien; Christopher Holmes; *FVCC, Kalispell, MT*
- MP 647 **Validation of Labeling Electrospray Deposition (LESD) by Examination of the Melittin Footprint**; Daniel Therrien; Paul Martino; Douglas Steiner; Nicole Therrien; Jonathan Burden; *FVCC, Kalispell, MT*
- MP 648 **Determination of Melittin-calmodulin Binding Interactions by Labeling Electrospray Deposition (LESD): A Focus on the Melittin Structure using a Novel Process**; Nicole Therrien; Daniel Therrien; Douglas Steiner; Jonathan Burden; Patrick Ingham; Christopher Holmes; Paul Martino; *FVCC, Kalispell, MT*
- MP 649 **Labeling α -conotoxin with Methylene during Electrospray to Explore Rigid Structure Constraints and Support a Newly Developed Mass Spectrometry-based Process**; Jonathan Burden; Daniel Therrien; Nicole Therrien; Douglas Steiner; Paul Martino; *Flathead Vally Community College, Kalispell, MT*
- MP 650 **Data Analysis for ESI-MS of Peptides Prepared by Labeling Electrospray Deposition (LESD): A New Process for Studying Protein Interactions**; Douglas Steiner; Paul Martino; Dan Therrien; Jonathan Burden; Nicole Therrien; *Flathead Valley Comm College, Kalispell, MT*
- MP 651 **Labeling Electrospray Deposition (LESD): Refining a Prototype and Proposed Redesign for a New Covalent Labeling Process to Study Structural Interactions**; Jacob Harris; Patrick Ingham; Daniel Therrien; Nicole Therrien; Jonathan Burden; Douglas Steiner; Christopher Holmes; Paul Martino; *Flathead Valley Community College, Kalispell, MT*
- BIOMARKERS: QUANTITATIVE ANALYSIS, 652 - 667**
- MP 652 **Significance of Ion Signal Resolution in MALDI Quantification Studies**; Kandalama Priyasantha; Gary R. Kinsel; *Southern Illinois University Carbondale, Carbondale, IL*
- MP 653 **High Throughput Relative Quantification of Multi Carboxyl-containing Plant Hormones in Arabidopsis Thaliana with Isobaric Tags using Liquid Chromatography-tandem mass Spectrometry**; Xiaohong Sun; Jinfang Chu; Cunyu Yan; *Institute of Genetics and Developmental Biology, C, Beijing, China*
- MP 654 **Rapid and Sensitive Determination of Human Brain Levels of Farnesyl- (FPP) and Geranylgeranylpyrophosphate (GGPP) and Transferase Activities using UHPLC-MS/MS**; Dietrich A. Volmer¹; Gero Hooff²; Gunter Eckert²; ¹Saarland University, Saarbrücken, Germany; ²Goethe-University of Frankfurt, Frankfurt, Germany
- MP 655 **Novel Method for Simultaneous Quantification of A β X-38, X-40, X-42 and total-A β in Rat Brain using Optimized Sample Purification and Column-switching-LC-SRM**; Kenichi Watanabe¹; Chihiro Ishikawa¹; Hiroshi Kuwahara¹; Kimihiko Sato¹; Naruaki Nomura¹; Masashi Yabuki¹; Shiro Watanabe²; Setsuko Komuro¹; ¹Dainippon Sumitomo Pharma Co., Ltd., Osaka, Japan; ²University of Toyama, Toyama, Japan
- MP 656 **A New Strategy for Identifying Alternative Spicing Variants using 2D LC/MS2**; Chenwei Lin¹; Jacob Kennedy¹; Ping Yan¹; Jeffrey Whiteaker¹; Lik Wee Lee¹; Travis Lorentzen¹; Susan E. Abbatiello²; Steven A. Carr²; Pei Wang¹; Amanda Paulovich¹; ¹Fred Hutchinson Cancer Research Center, Seattle, WA; ²Broad Institute, Cambridge, MA

- MP 657 **Validation of an Immunoprecipitation, Digestion and Immunoaffinity LC-MS/MS Assay for Human b-NGF Biomarker and Implementation in Support of Clinical Trials;** Kathlyn M. Porter¹; Hendrik Neubert²; Gary Schultz¹; ¹Advion BioServices, Inc., Ithaca, NY; ²Pfizer Corporation, Andover, MA
- MP 658 **A microRNA Network Controlled by Oncogenic B-Raf;** Thomas Lee^{1,2}; Kasey Coutts¹; Stephane Houel^{1,2}; Emily Anderson³; Maren Mayer³; Kevin Sullivan³; William Old¹; Natalie Ahn^{1,2}; ¹University of Colorado, Boulder, CO; ²Howard Hughes Medical Institute, Boulder, CO; ³Dharmacon RNA Technologies, Thermo Fisher, Lafayette, CO
- MP 659 **LC/MS/MS Quantitation of Pyridinoline and Desmosine Crosslinks from Aorta and Heart as a Biomarker of Heart Failure and Hypertension;** David R. Bush; Randy Vazquez; Douglas F. Larson; Vicki H. Wysocki; University of Arizona, Tucson, AZ
- MP 660 **Advanced Glycation End Products (AGEs) as Pathology Biomarkers: Microwave Assisted Synthesis and Biological Quantitative Analysis by LC-FTMS;** Claudio Medana; Sonja Visentin; Federica Dal Bello; Valeria Giancotti; Manuela Aragno; Raffaella Mastrocola; Claudio Baiocchi; University of Turin, Torino, Italy
- MP 661 **Identification of Ovarian Cancer Biomarkers using Lectin Microarray and Glycoproteomics;** Xiaolei Xie¹; Jing Wu²; Yashu Liu²; Jintang He²; David M. Lubman²; ¹Caprion Proteomics US LLC, Menlo Park, CA; ²University of Michigan, Ann Arbor, MI
- MP 662 **Identification of AAL-reactive Species of Immunoglobulin G (IgG) by Quantitative Analysis of N-linked Glyco-isoforms of IgG Using LC-MS/MS;** Chen Lu¹; Hongbo Gu²; Patrick Romano¹; Anand Mehta³; Timothy Block³; Carthene Bazemore-Walker²; Songming Chen¹; ¹Institute for Hepatitis and Virus Research, Doylestown, PA; ²Brown University, Providence, RI; ³Drexel University, Philadelphia, PA
- MP 663 **Identification of Glycoproteins Associated with Glioblastoma Stem Cell Differentiation;** Jintang He¹; Yashu Liu¹; Xiaolei Xie²; Thant Zhu¹; Xing Fan¹; Fan Xiang³; David M. Lubman¹; ¹University of Michigan, Ann Arbor, MI; ²Caprion Proteomics US LLC, Menlo Park, CA; ³Shimadzu Biotech, Pleasanton, CA
- MP 664 **A Validated Method for the Definitive Quantitation of Hepcidin 25 in Rat Serum by LC-MS/MS;** John E. Buckholz; Barry R. Jones; Kristen M. Bearup; Kathlyn M. Porter; Danielle R. Strong; Gary A. Schultz; Advion BioServices, Inc., Ithaca, NY
- MP 665 **Quantitative Investigation of Peptide Biomarker Stability in Blood Specimens by comparing MS and ELISA Methods;** Jizu Yi; David Craft; BD Diagnostics, Franklin Lakes, NJ
- MP 666 **Kinase Inhibition Studies Using a High Resolution/Accurate Mass MS Targeted Approach and Nucleotide Probes;** Scott Peterman^{1,2,3}; Amol Prakash^{1,2,3}; Rosa Viner^{1,2,3}; Ryan Bomgarden^{1,2,3}; John Rogers^{1,2,3}; ¹Thermo Fisher Scientific, Cambridge, MA; ²Thermo Fisher Scientific, San Jose, CA; ³Thermo Fisher Scientific, Rockford, IL
- MP 667 **Quantitative Phosphoproteomics in Surrogate Tissues for Pharmacodynamic and Target Engagement Biomarkers Development for Kinase Inhibitors;** An Chi¹; Peter R. Strack¹; Hongbo Guo²; Jan-Rung Mo¹; John F. Reilly¹; Ronald C. Hendrickson¹; Cloud Paweletz¹; ¹Merck, Boston, MA; ²University of Toronto, Toronto, Ontario
- BIOMARKERS: DISCOVERY-CANCER, 668 - 694**
- MP 668 **A CPTAC multisite Lectin-based Analysis of Glycopeptide Biomarker Candidates utilizing Cancer Cell Lines, and Plasma Samples from Patients and Controls;** Birgit Schilling¹; Penelope M. Drake²; Richard Niles²; Bensheng Li¹; Jason Held¹; Miles Braten²; Matthew Albertolle²; Kwanyoung Jung³; Wonryeon Cho³; Halina D Inerowicz³; Katherine Williams²; Eric Johansen²; Simon Allen²; Dylan J Sorensen¹; Demitris Iacovides⁴; Steven C. Hall²; H. Ewa Witkowska²; Joe Gray⁴; Fred Regnier³; Susan Fisher²; Bradford W. Gibson¹; ¹Buck Institute for Research on Aging, Novato, CA; ²University of California San Francisco, San Francisco, CA; ³Purdue University, West Lafayette, IN; ⁴Lawrence Berkeley National Laboratory, Berkeley, CA
- MP 669 **Secretome Signature of Invasive Glioblastoma Multiforme;** Catherine Formolo¹; Russell Williams²; Tobey J MacDonald³; Norman H Lee²; Yetrib Hathout⁴; ¹Children's National Medical Center, Washington, DC; ²Department of Pharmacology and Physiology, GWU, Washington, DC; ³Aflac Cancer Center, Emory University, Atlanta, GA; ⁴Children's Natl. Medical Center, Washington, DC
- MP 670 **Analysis of Glioblastoma Tumors Using a Triziac nanoTile based UPLC System in Combination with SYNAPT G2 and XEVO TQ-S MS;** Tony Tegeler; Wendy McDonough; Linda Nagore; Jian Liu; Ashoka D. Polpitiya; Michael Berens; Konstantinos Petritis; Translational Genomics Research Institute, Phoenix, AZ
- MP 671 **Analysis of Human Melanoma Cell Lines Secretomes;** Livia Malorni¹; Micaela Rocco²; Rosaria Cozzolino¹; Giuseppe Palmieri³; Carla Rozzo³; Augusto Parente²; Angela Chambery²; ¹CNR Institute of Food Science, Avellino, Italy; ²Second University of Naples, Caserta, Italy; ³Unit of Cancer Genetics CNR-ICB, Sassari, Italy
- MP 672 **Discovery of Melanoma Autoantibody using Mass Spectrometry and Glycoprotein Microarray;** Yashu Liu¹; Jintang He¹; Michael Sabel¹; Fan Xiang²; David M. Lubman¹; ¹University of Michigan, Ann Arbor, MI; ²Shimadzu Biotech, Pleasanton, CA
- MP 673 **Mesoporous Silica Nanochip Fractionation and MALDI-MS Identify Serum Low-Molecular-Weight Peak Profiles Associated with Treatments in Melanoma Mouse Model;** Adaikkalam Vellaichamy¹; Renduo Song²; Ye Hu¹; Ann L. Van de Ven¹; Diana L. Chan¹; Catherine E. Hickman¹; Jason H. Sakamoto¹; Menashe Bar-Eli²; Mauro Ferrari¹; ¹The Methodist Hospital Research Institute, Houston, TX; ²UT M.D. Anderson Cancer Center, Houston, TX
- MP 674 **Glycoprotein Profiling of Breast Cancer Cell Lines;** Ten-Yang Yen; Judi Wong; Chris Alleyne-Chin; Christina Litsakos-Cheung; Roger Yen; Leslie

- MP 675 Timpe; Bruce Macher; *San Francisco State University, San Francisco, CA*
Hormone Resistance in Breast Cancer: Biomarkers and Potential Drug Targets; Changhua Zhou¹; Qiang Zhang¹; Matthew Burow²; Guangdi Wang¹; ¹Xavier University of Louisiana, New Orleans, LA; ²Tulane University School of Medicine, New Orleans, LA
- MP 676 **Lipid Profiles in Breast Cancer Samples: Identification of Glycosphingolipids Associated to Estrogen and Progesterone Receptor Negative Tumors;** Heli Nygren; Mika Hilvo; Tuulia Hyötyläinen; Matej Orešič; *VTT Technical Research Centre of Finland, Espoo, Finland*
- MP 677 **Mass Spectrometry Analysis of the Role of the Extracellular Microenvironment in Breast Cancer Development and Disparity;** Zhen Xiao¹; Jody Fleming²; Xia Xu¹; Tyler Miller²; Mariam Quinones²; Matthew Meyer²; Erika Ginsburg²; Timothy Veenstra¹; Barbara Vonderhaar²; ¹SAIC - Frederick, Inc., Frederick, MD; ²NCI, Bethesda, MD
- MP 678 **The Proteomic Mapping of Blood Plasma of the Man in Health and Lung Cancer;** Valeriy Shevchenko; Sergey Kovalev; Natalia Arnotskaya; *N. N. Blokhin Russian Cancer Research Center, Moscow, Russian Federation*
- MP 679 **Integrated Strategy for Lung Cancer Biomarker Candidate Discovery by Quantitative Proteomics Profiling on Tumor and Adjacent Normal Lung Tissue;** Haizhen Zhang¹; Jacob Kennedy¹; Lik Wee Lee¹; Chenwei Lin¹; Pin Yan¹; Jeffrey Whiteaker¹; Travis Lorentzen¹; Marc Schlessner²; Georg Wendt³; Khaled Chalabi³; Georges Decker⁴; Olivia Roland⁵; Bruno Domon⁶; Helen Ross⁷; Cheryl Selinsky⁸; Konstantinos Petritis⁸; Guy Berchem^{2,5}; Amanda Paulovich¹; ¹Fred Hutchinson Cancer Research Center, Seattle, WA; ²Centre Hospitalier de Luxembourg, Luxembourg; ³Institut National de Chirurgie cardiaque (INCCI), Luxembourg; ⁴Clinique Zitha, Luxembourg; ⁵Laboratoire d'Hémo Cancérologie Expérimentale, CRP-Santé, Luxembourg; ⁶Luxembourg Clinical Proteomics Center, CRP-Santé, Luxembourg; ⁷Mayo Clinic, Scottsdale, AZ; ⁸Translational Genomics Research Institute, Phoenix, AZ
- MP 680 **Quantitative Phosphoproteomic Analysis of Lung Cancer Tumor Factors;** Devin K. Schweppe; Scott A. Gerber; *Dartmouth Medical School, Lebanon, NH*
- MP 681 **CDRs as an Early Detection Marker for Non-Small Cell Lung Cancer using Mass Spectrometry;** Dominique de Costa¹; Ingrid Broodman¹; Martijn M. Vanduijn¹; Wim Calame²; Christoph Stingl¹; Lennard J. Dekker¹; René Vernhout¹; Henk C. Hoogsteden¹; Peter A.E. Sillevius Smitt¹; Rob J. van Klaveren¹; Theo M. Luider¹; ¹Erasmus Medical Center, Rotterdam, the Netherlands; ²StatistiCal BV, Wassenaar, the Netherlands
- MP 682 **Global Phosphoproteome Analysis of Patient-derived Acute Myeloid Leukemia: Towards the Discovery of Phosphorylation Biomarkers for Individualized Therapy;** Felix Oppermann; *c/o Kinaxo Biotechnologies, Munich, Germany*
- MP 683 **Biomarker Candidates Discovery in a Large, Multi-site Bladder Cancer Patients Cohort, using a Label-free Quantitative Proteomics Approach;** Magali Court¹; Mourad Mellal¹; Madalen Le Gorrec¹; Yves Allory²; Núria Malats³; Christophe Bruley¹; Elodie Duriez⁴; Bruno Domon⁴; Jérôme Garin¹; Christophe D Masselon¹; ¹EDyP Laboratory CEA, Grenoble, France; ²APHP, Henri Mondor Hospital, Pathology, Creteil, France; ³Spanish National Cancer Research Centre, Madrid, Spain; ⁴Luxembourg Clinical Proteomics Center, Luxembourg, Luxembourg
- MP 684 **Proteomic Discovery of Gastric Cancer Tissue Biomarkers Using MALDI-IMS and 2D-DIGE;** Chun-Chia Cheng¹; Chun-Chao Chang¹; Shui-Cheng Lee²; Jung-Shan Chang¹; Fu-Der Mai¹; ¹Taipei Medical University, Taipei, Taiwan; ²Institute of Nuclear Energy Research, Taoyuan, Taiwan
- MP 685 **Discovery of Biomarkers of Gastrointestinal Cancer in Colonic Lavage Fluid;** Jana M. Rocker²; Carlo M. Contreras²; Jack A. DiPalma¹; Lewis K. Pannell²; ¹University of South Alabama, Mobile, AL; ²Mitchell Cancer Institute, Mobile, AL
- MP 686 **Proteomics Biomarker Discovery in Plasma of Mice Xenografted with Human Colorectal Carcinoma Cells;** Svetlana Mihaylova-Todorova¹; Elissa L. DeVos²; Jian Liu¹; Tony Tegeler¹; Ashoka D. Polpitiya¹; Jeffrey MacKeigan²; Konstantinos Petritis¹; ¹Translational Genomics Research Institute, Phoenix, AZ; ²Van Andel Research Institute, Grand Rapids, MI
- MP 687 **Protein Profiling for Biomarker Discovery in Patients with Colorectal Cancer using 2D-(RP-RP)-HPLC MS/MS Approach;** Peyman Ezzati¹; Oleg V. Krokhin¹; Vic Spicer¹; Mohamed Akra²; Ahmet Leylek²; Harminder Singh¹; ¹University of Manitoba, Winnipeg, Canada; ²CancerCare Manitoba, Winnipeg, Canada
- MP 688 **Proteomics Study of Head-And-Neck Squamous Cell Carcinoma Using iTRAQ Labeling and an Iterative LC-MS Analysis;** Sebastien Voisin¹; Olga Krakovska¹; Ajay Matta¹; Leroi DeSouza¹; Ranju Ralhan²; K W Michael Siu¹; ¹CRMS - York University, Toronto, Canada; ²Mount Sinai Hospital, Toronto, Canada
- MP 689 **The Salivary Peptidome: Sample Handling/Collection Considerations and Identification of Naturally Occurring Peptide Biomarkers of Oral Cancer;** Ebbing De Jong¹; Joseph Koopmeiners²; Tim Griffin¹; ¹University of Minnesota; Biochemistry, Minneapolis, MN; ²University of Minnesota; Biostatistics, Minneapolis, MN
- MP 690 **Cancer Genetics-guided Discovery of Serum Biomarker Signatures for Prostate Cancer Diagnosis and Treatment Response;** Ralph Schiess^{1,2}; Igor Cima¹; Peter Wild³; Martin Kealin⁴; Peter Schöffler¹; Joachim Buhmann¹; Thomas Cerny⁴; Holger Moch³; Silke Gillesen⁴; Wilhelm Krek¹; Ruedi Aebersold¹; ¹ETH Zurich, Zurich, Switzerland; ²ProteoMediX Inc., Zurich, Switzerland; ³University Hospital Zurich, Zurich, Switzerland; ⁴Kantonsspital St Gallen, St Gallen, Switzerland
- MP 691 **Evaluation of a High Throughput LC/MS/MS/MS (MS³) Method for Quantitation of NEDD8-MLN4924 Adduct;** Ling Xu; Matthew

Jones; David Lok; David Matheka; Nina Molchanova; Chris Blackburn; *Millennium Pharmaceutical, Cambridge, MA*

- MP 692 **Targeting Biomarker Discovery via Selective Tissue Proteome Enrichment;** Cheng S. Lee¹; Xueping Fang²; Fang He²; Brian Balgley²; Chen Chen Wang¹; Ie-Ming Shih³; ¹*University of Maryland, College Park, MD*; ²*Calibrant Biosystems, Gaithersburg, MD*; ³*Johns Hopkins Medical Institutions, Baltimore, MD*

- MP 693 **Proteomic Analysis of Phenotypes Produced by Cancer-related Mutations;** Patrick J. Halvey; Bing Zhang; Haixia Zhang; Natasha G. Deane; Ajaz Bhat; Punita Dhawan; Lisa J. Zimmerman; R. Daniel Beauchamp; Robert J. Coffey; Daniel C. Liebler; Robbert J.C. Slebos; *Vanderbilt University, Nashville, TN*

- MP 694 **High-Throughput Native Glycan Chromatographic Profiling with Isomer Separation and Quantitation for the Discovery of Cancer Biomarkers;** Serenus Hua¹; Cynthia Williams¹; Hyun Joo An¹; Sureyya Ozcan¹; Grace Ro¹; Ning Tang²; Keith Waddell²; Jay Solnick¹; Carlito Lebrilla¹; ¹*University of California, Davis, CA*; ²*Agilent Technologies, Santa Clara, CA*

7:30-8:00 am All Tuesday posters should be set
 10:30 am-2:30 pm All poster authors should be present
 11:45 am-12:15 pm . Lunch break for odd-numbered posters
 12:15-12:45 pm.....Lunch break for even-numbered posters
 7:30-8:00 pmRemove all Tuesday posters

Ionization Mechanisms; 001 - 022

Direct Ionization: Instrumentation; 023 - 036

Direct Ionization: Applications II; 037 - 050

New Developments in Ionization II; 051 - 078

High Mass Accuracy/High Performance Applications I;
 079 - 101

Protein Therapeutics: Structural Characterization; 102 - 129

Ion Mobility: Applications; 130 - 159

Carbohydrates: New Approaches; 160 - 188

Metabolomics: Identification of Unknown Metabolites;
 189 - 209

Drug Metabolism: Qualitative Analysis; 210 - 234

Drug Metabolism: Quantitative Analysis I; 235 - 252

Small Molecule: Quantitative Analysis; 253 - 282

Energy: Hydrocarbon and Petrochemical; 283 - 306

Toxicology; 307 - 328

Polymers; 329 - 350

Food Safety; 351 - 375

Informatics: Post-Translational Modifications; 376 - 384

Informatics: Systems Biology/Pathway Analysis; 385 - 402

Imaging MS: Software; 403 - 411

Imaging MS: Instrumentation; 412 - 426

Peptides: PTM Identification I; 427 - 445

Peptides: Quantitative Analysis - Labeled; 446 - 463

Peptides: Sequence Analysis; 464 - 470

H/D Exchange: Biomolecular Structural Analysis; 471 - 505

Glycoproteins: Characterization; 506 - 528

Proteins: Phosphoproteins; 529 - 552

Intact Proteins: PTM Discovery; 553 - 567

Proteins: Membrane; 568 - 587

Proteomics: Tissue; 588 - 616

Proteomics: Applications I; 617 - 641

Biomarkers: Discovery I; 642 - 667

Biomarker: Quantitative Analysis; 668 - 694

Systems Biology I; 695 - 718

IONIZATION MECHANISMS; 001 - 022

- TP 001 **From Solution Phase to Spectrometer, an Analytical Model for the Electrospray Process from a Proteomics Perspective;** John B. Hayes; Keith Richardson; *Waters, Manchester, UK*
- TP 002 **Modification of Labile Post-Translational Determinations for Peptide Fragmentation during Nanoelectrospray Ionization;** Lei Tan¹; Yu Xia²; ¹graduate student, *West Lafayette, IN*; ²Purdue University, *West Lafayette, IN*
- TP 003 **Mechanism of Electrospray Ionization Explored by Molecular Dynamics Simulations;** Elias Ahadi^{1,2}; Lars Konermann^{1,2}; ¹Univ. of Western Ontario, *London, ON*; ²Univ. of Western Ontario, *London, ON*
- TP 004 **Clarifying the Ionization Mechanism of Extractive Electrospray Ionization (EESI);** Rui Wang; *Swiss Federal Institute of Technology Zurich, Zurich, Switzerland*
- TP 005 **Examining the Influence of Sample Volatility on the Sensitivity of Extractive Electrospray Ionization Mass Spectrometry;** Lukas Meier; Renato Zenobi; *ETH Zurich, Zurich, Switzerland*
- TP 006 **Reagents for Enhancing Protein Charging for Electrospray Ionization Mass Spectrometry from Organic/Aqueous Solvent Systems;**

Rajeswari Lakshmanan; Sabrina Benchaar; Ivory Peng; Carly Ferguson; Shirley Lomeli; Jiang Zhang; Rachel O. Loo; Joseph A. Loo; *UCLA, Los Angeles, CA*

- TP 007 **The Effects of Polypeptide Sequence on Supercharging for ESI-MS and MS/MS;** Rudy Alvarado; Rajeswari Lakshmanan; Rachel O. Loo; Joseph A. Loo; *UCLA, Los Angeles, CA*
- TP 008 **Investigating the Role of Analyte Partitioning in Protein Supercharging;** Kevin Douglass; John Miller; Andre Venter; *Western Michigan University, Kalamazoo, MI*
- TP 009 **Role of Anions in Determining Charge State Distributions of Peptides;** Xiaohua Liu; Richard B. Cole; *University of New Orleans, New Orleans, LA*
- TP 010 **Effect of Protic and Aprotic Solvents on Negative Ion ESI Response for a Physicochemically Diverse Group of Acidic Compounds;** Christine A. Hughey; Bruce Wilcox; Daniel Rafferty; Brian Huffman; Evangelyn Brunson; Jenny Phung; *James Madison University, Harrisonburg, VA*
- TP 011 **Investigation of Matrix Effect Focused on Interaction among Matrix and Target Molecules;** Megumi Wakimoto; Hajime Mizuno; Naohiro Tsuyama; Takanori Harada; Tsutomu Masujima; *Hiroshima Univ. Grad. Sch. Biomed. Sci, Hiroshima, Japan*
- TP 012 **Optical profiling of an Agilent Jet Stream Technology electrospray by Laser-Induced-Fluorescence Coupled to Mass Spectrometry Measurements;** Marion Girod; Rodolphe Antoine; Philippe Dugourd; *CNRS Université Lyon 1, Villeurbanne, France*
- TP 013 **Exploring the Molecular Organization in Solvent-Free MALDI Samples by Solid State NMR;** Yannis Major¹; Hélène Pizzala¹; Fabio Ziarelli²; Laurence Charles¹; ¹Aix-Marseille Universities, *UMR 6264, SACS, Marseille, France*; ²Spectropole, *Féd Sciences Chimiques-CNRS, FR 1739, Marseille, France*
- TP 014 **Simulation of Material Removal in Ambient Laser Desorption Ionization Mass Spectrometry;** Fan Huang; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*
- TP 015 **Particle Formation in Atmospheric Pressure Laser Desorption and Ionization;** Thabiso Musapelo; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*
- TP 016 **New insights in the Atmospheric Pressure Photoionisation (APPI) Mechanisms Using Tunable Synchrotron VUV Radiation;** David Touboul¹; Alexandre Giuliani^{2,3}; Julie Allegrand¹; Olivier Laprévote^{1,4}; Alain Brunelle¹; ¹Centre de recherche de Gif, *ICSN-CNRS, Gif-Sur-Yvette, France*; ²DISCO beamline, *Synchrotron Soleil, Gif-Sur-Yvette, FRANCE*; ³Cepia, *Institut National de Recherche Agronomique, Nantes, France*; ⁴CTAC, *EA446, Université Paris Descartes, Paris, France*
- TP 017 **Mechanistic Study of Role of Toluene Molecules in Positive Mode APPI of Polycyclic Aromatic Compounds;** Arif Ahmed; Cheol-Ho Choi; Sunghwan Kim; *Kyungpook National University, Daegu, Republic of Korea*
- TP 018 **Activation of C-C and C-H Bonds in Hydrocarbons by Field-Assisted Nitrogen Atom Insertion;** Guangtao Li; Xin Li; Zheng

- Ouyang; R. Graham Cooks; *Purdue University, West Lafayette, IN*
- TP 019 **Paper Spray Ionization using Solvents of Low Polarity or High Viscosity;** Anyin Li; He Wang; Michael Wlekinski; Ryan Espy; Zheng Ouyang; R. Graham Cooks; *Purdue University, West Lafayette, IN*
- TP 020 **Ion formation and Evolution in Atmospheric Pressure Corona Discharges between Arbitrary Point-to-plane Electrode Conditions;** Kanako Sekimoto¹; Mitsuo Takayama²; ¹National Institute for Environmental Studies, Tsukuba, Japan; ²Yokohama City University, Yokohama, Japan
- TP 021 **Ion Yield and Ion Suppression "Hot-Spots" in Direct Analysis In Real Time Mass Spectrometry;** Glenn A Harris; Caitlin E. Falcone; Facundo Fernandez; *Georgia Institute of Technology, Atlanta, GA*
- TP 022 **Characterization of the Compound-dependent Mechanisms of APCI using Ultra High Resolution TOF Mass Spectrometry;** Matthew Giardina; Timothy Judkins; Viatcheslav Artaev; *LECO Corporation, St. Joseph, MI*

DIRECT IONIZATION: INSTRUMENTATION; 023 - 036

- TP 023 **Laser Desorption Dual-spray Post-Ionization (LDDPI) Mass Spectrometry;** Jia Liu; *Peking University, Beijing, China*
- TP 024 **Direct Production of C⁺ beam from CO₂ gas for an Accelerator Mass Spectrometer Using a Secondary Ion Source;** Gary Abdiel Salazar; Ted Ognibene; *Center for Accelerator Mass Spectrometry, LLNL, Livermore, CA*
- TP 025 **Improving DART Sample Introduction Via Induction Based Fluidics;** Drew Sauter¹; Andrew Grange²; ¹Nanoliter, LLC, Henderson, NV; ²U.S. EPA, Las Vegas, NV
- TP 026 **Integration of Automated Methods for Improved Qualitative and Quantitative Analysis in DART-MS;** Michael Festa; Elizabeth Crawford; Joseph Tice; *IonSense, Inc., Saugus, MA*
- TP 027 **An Optimized Design of the Desorption Corona Beam Ionization Source (DCBI) and its Applications;** Wenjian Sun; Junsheng Zhang; Joseph Ting; Xiaohui Yang; Lijie Yang; Junfeng Yan; Xiaoqiang Zhang; Li Ding; *Shimadzu Research Laboratory (Shanghai), Shanghai, China*
- TP 028 **Laser Ablation Sample Transfer: Ambient Sampling for MALDI;** Sung Gun Park; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*
- TP 029 **Intrasurgical Identification of Tissues by Direct Combination of Ultrasonic Surgical Aspiration and Sonic Spray Mass Spectrometry;** Karl C Schaefer¹; Julia Balog²; Zoltan Takats¹; ¹Justus-Liebig-University, Giessen, GERMANY; ²Medimass Ltd., Budapest, HUNGARY
- TP 030 **Optimisation and Damage Study of Ambient Mass Spectrometry using a PADI rce;** Tara La Roche Salter¹; Felicia Green¹; Ian Gilmore¹; James Bradley²; ¹National Physical Laboratory, Teddington, UK; ²Liverpool University, Liverpool, UK
- TP 031 **Direct Ambient Analysis using Atmospheric Pressure Photoionization (APPI);** Kaveh Jorabchi; Sheng-Suan (Victor) Cai; Brian J. Nies;

Jack A. Syage; *Syagen Technology, Inc., Tustin, CA*

- TP 032 **Ambient Mass Spectrometry: Ensuring Consistency in DESI;** Felicia Green; Tara La Roche Salter; Ian Gilmore; *National Physical Laboratory, Teddington, UK*
- TP 033 **Enhanced Direct Ambient Analysis by Differential Mobility-Filtered Desorption Electrospray Ionization-Mass Spectrometry;** Facundo Fernandez; Asiri Galhena; Mark Kwasnik; Glenn A Harris; *Georgia Institute of Technology, Atlanta, GA*
- TP 034 **Development of an Endoscopic DESI Sampling Probe;** Chien-Hsun Chen¹; Ziqing Lin¹; Sandilya Garimella¹; Robert Graham Cooks²; Zheng Ouyang¹; ¹Biomedical Engineering, Purdue, West Lafayette, IN; ²Chemistry, Purdue, West Lafayette, IN
- TP 035 **Leaf Spray: Direct Ambient Ionization for Plant Tissue Analysis;** Jiangjiang Liu; He Wang; R. Graham Cooks; Zheng Ouyang; *Purdue University, West Lafayette, IN*
- TP 036 **Rotating Electrospray Ionization Mass Spectrometry (RESI-MS);** Jentaie Shiea; Siou-sian Jhang; *National Sun Yat-Sen Univ., Kaohsiung, Taiwan*

DIRECT IONIZATION: APPLICATIONS II; 037 - 050

- TP 037 **Rapid Screening of Synthetic Antidiabetic Drugs Adulterated in Herbal Dietary Supplements using DART MS;** Zhiqui Zhou; Jialing Zhang; Yu Bai; Huwei Liu; *College of Chemistry, Peking University, Beijing, China*
- TP 038 **Determination of Ginsenosides in Ginseng Roots and Commercial Products by using In-situ Derivatization Direct Analysis in Real Time;** Rachel N Liu¹; Hao Yue²; Jordan Krechmer³; Lili Jiao²; Charles C Liu¹; Brian Musselman³; Shuying Liu²; ¹ASPEC Technologies, Beijing, China; ²Jilin Ginseng Academy, Changchun University of TCM, Changchun, China; ³IonSense, Inc., Saugus, MA
- TP 039 **Transmission-Mode Direct Analysis in Real Time (DART) Quadrupole Time-of-Flight Mass Spectrometry for Fast Untargeted Metabolomic Profiling of Human Serum;** Christina Jones; Manshui Zhou; Facundo Fernandez; *Georgia Institute of Technology, Atlanta, GA*
- TP 040 **Quantitative Capabilities of DART-Orbitrap MS for Determination of Pesticides on Fruits and Vegetables;** Lenin Parrales²; Peter T. Palmer¹; Adam Leung¹; ¹San Francisco State University, San Francisco, CA; ²Food & Drug Administration, Alameda, CA
- TP 041 **Ionization and Sequence of Peptides Bound to Solid Supports without Deprotection or Cleavage Prior to Analysis by DART TOF MS;** Matthew Curtis¹; Laura Sanchez²; Bianca Bracamonte²; Roger Linington²; Patrick R. Jones¹; O. David Sparkman¹; ¹University of the Pacific, Stockton, CA; ²University of California Santa Cruz, Santa Cruz, CA
- TP 042 **Ambient Ionization High Resolution Mass Spectrometry to Determine Non-Visible Set-off in Food Contact Materials;** Karim Bentayeb; Luke Ackerman; John H. Callahan; Timothy Begley; *FDA Center for Food Safety, College Park, MD*

- TP 043 **Enabling High Throughput Bioanalysis by Transmission Mode DART: In-line Desorption Ionization of Small Molecules from an Array of Samples;** Elizabeth Crawford; Joseph Tice; Michael Festa; Brian D. Musselman; *IonSense, Inc., Saugus, MA*
- TP 044 **Rapid Sample Cleanup Procedure using Disposable Pipette Extraction (DPX) for Detection of Drugs in Urine by DART;** Robert B. Cody¹; John Dane¹; William E. Brewer²; ¹JEOL USA, Inc., Peabody, MA; ²DPX Laboratories, Columbia, SC
- TP 045 **Mass Spectrometric Fragmentation Behavior of Chalcone Derivatives Employing Direct Analysis in Real Time (DART) Technique;** Adnan Kadi; Mohamed Attwa; A. F. M. Motiur Rahman; *King Saud University, College of Pharmacy, Riyadh, Saudi Arabia*
- TP 046 **Detecting Transient Organometallic Catalytic Intermediates on the Millisecond Timescale Using Desorption Electrospray Ionization;** Richard H. Perry; Konstantin Chingin; Richard N. Zare; *Stanford University, Stanford, CA*
- TP 047 **Surface-Enhanced Desorption Electrospray Ionization Mass Spectrometry of Biomarkers using Silicon Substrates;** John O'Brien; Ivan Jewett; Jennifer Brodbelt; *The University of Texas, Austin, TX*
- TP 048 **Representative Sampling and Monitoring of the Synthesis of Tetraphenylporphyrin with Desorption Electrospray Ionization Mass Spectrometry;** Jonathan Person; Emily Backhus; Christopher Mulligan; *Illinois State University, Normal, IL*
- TP 049 **Rapid Screening of Performance Enhancing Drug Masking Agents in Biological Samples Using Desorption Electrospray Ionization Mass Spectrometry;** Alexandra Elledge; Kyle Vircks; Eric Flesher; Christopher Mulligan; *Illinois State University, Normal, IL*
- TP 050 **Planar Separations and Analysis of Intact Tissue Samples using DESI-MS;** Justin Wiseman; *Prosolia, Inc., Indianapolis, IN*
- NEW DEVELOPMENTS IN IONIZATION II; 051 - 078**
- TP 051 **Piezoelectric Driven Microplasma – a Non-Thermal Atmospheric Pressure Ionization Source;** Albrecht Brockhaus; Alexander Laue; Albrecht Glasmachers; *University of Wuppertal, Wuppertal, Germany*
- TP 052 **Positive and Negative Ion Formation of Amino Acid and its Hydrated Clusters using Ambient Corona Discharge with Micro-devices;** Mami Sakai; Mitsuo Takayama; *Yokohama City University, Yokohama, JAPAN*
- TP 053 **Dielectric Barrier Discharge Microplasma-Ionization for LC/MS Applications;** Heiko Haven¹; Antje Michels²; Bogdan Olenici-Craciunescu²; Helma Geltenpoth²; Joachim Franzke²; ¹University of Wuppertal, Wuppertal, Germany; ²Leibniz-Institut für Analytische Wissenschaften, Dortmund, Germany
- TP 054 **Double Cylindrical Dielectric Barrier Discharge Ion Source and it's Application in Different Fields;** Mridul Kanti Mandal¹; Satoshi Ninomiya¹; Lee Chuin Chen²; Takashi Iwama²; Kenzo Hiraoka¹; ¹University of Yamanashi, Kofu, Japan; ²The Yamanashi Prefectural Industrial Technology, Kofu, Japan
- TP 055 **Comparison of Ion Internal Energy Deposition with Surface Acoustic Wave Nebulization (SAWN) and Electrospray Ionization;** Yue Huang¹; Sung Hwan Yoon¹; Scott Heron¹; Christophe Masselon²; John Edgar¹; Frantisek Turecek¹; David R. Goodlett¹; ¹University of Washington, Seattle, WA; ²CEA Grenoble, Grenoble, France
- TP 056 **Combined ESI/LIFDI-Ion Source for a FT-ICR Mass Spectrometer;** Jürgen H. Gross¹; H. Bernhard Linden²; ¹Inst. of Organic Chemistry, Heidelberg University, Heidelberg, Germany; ²Linden CMS, Leeste, Germany
- TP 057 **Enhanced Rates of Bulk Solution Phase Organic Reactions Using Charged Microdroplets as Reaction Vessels;** Abraham K Badu Tawiah; R. Graham Cooks; *Purdue University, West Lafayette, IN*
- TP 058 **Visualization of High Flow Electrospray with a Coaxially Flowing Gas;** Farhan Sultan¹; Amirreza Amighi¹; Nasser Ashgriz²; Lisa M. Cousins²; Gholamreza Javahery²; ¹University of Toronto, Toronto, Canada; ²IONICS Mass Spectrometry Group, Inc., Bolton, ON
- TP 059 **Study of a Labile Post Translational Modification using Alternating Current (AC) Electrospray;** Katie Isbell; *University of Notre Dame, Notre Dame, IN*
- TP 060 **Theoretical Studies of Swirling Flow and Heating Methods on Droplet Evaporation in a Heated Coaxial Flow APCI Ion Source;** Charles Jolliffe¹; Serguei Savtchenko¹; George Scott¹; Nasser Ashgriz²; ¹IONICS Mass Spec Group, Inc., Bolton, ON; ²University of Toronto, Toronto, ON
- TP 061 **Super Atmospheric Pressure (P > 1 atm) Electrospray Ion Source;** Lee Chuin Chen; Mridul Kanti Mandal; Kenzo Hiraoka; *University of Yamanashi, Kofu, Japan*
- TP 062 **Vacuum Electrospray Assisted by Laser Irradiation;** Satoshi Ninomiya; Lee Chuin Chen; Yuji Sakai; Kenzo Hiraoka; *University of Yamanashi, Kofu, Japan*
- TP 063 **Application of a Sheathless Capillary Electrophoresis-Electrospray Ionization-Mass Spectrometry (CE-ESI-MS) Platform for Peptide Analysis: Comparison to nanoLC-ESI-MS;** Herbert H. Lindner; Klaus Faserl; Leopold Kremser; Bettina Sarg; *Biocenter, Division of Clinical Biochemistry, Innsbruck, Austria*
- TP 064 **Analytes Fractionation in Probe Electrospray Ionization;** Kenzo Hiraoka; Mridul Kanti Mandal; Lee Chuin Chen; *University of Yamanashi, Kofu, Japan*
- TP 065 **Improving Ion Production and Efficiency with Obstruction Surfaces using Sonic Spray Ionization (SSI) Mass Spectrometry;** Nicholas Chubaty; Charles N. McEwen; *Univ. of the Sciences, Philadelphia, PA*
- TP 066 **Analysis from 'Non-ESI-Friendly' Solvents using Continuous Flow-Extractive Desorption Electrospray Ionization-Mass Spectrometry;** Li Li¹; Samuel Yang¹; Karel Lemr²; Vladimir Havlicek³; Kevin Schug¹; ¹University of Texas Arlington, Arlington, TX; ²Palacky University, Olomouc, CZECH REPUBLIC; ³Institute of Microbiology, Prague 4, CZECH REPUBLIC
- TP 067 **Numerical Simulation of the Distribution of Ion Acceptance (DIA) in a commercial API**

- Source;** Walter Wissdorf; Matthias Lorenz; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- TP 068 **Distribution of Ion Acceptance in a Fluid-dynamically optimized Multi-purpose Ion Source;** Matthias Lorenz; Klaus J. Brockmann; Walter Wissdorf; Dennis Klink; Oliver J. Schmitz; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- TP 069 **Computational Fluid Dynamic Model of a commercial Atmospheric Pressure Ion Source;** Thorsten Poehler²; Robert Kunte²; Herwart Hoenen²; Peter Jeschke²; Walter Wissdorf¹; Thorsten Benter¹; ¹*University of Wuppertal, Wuppertal, Germany*; ²*RWTH Aachen, Aachen, Germany*
- TP 070 **Comparison and Validation of Atmospheric Pressure Ion Migration Models - Finite Elements Method vs. Discrete Particle Tracing;** Klaus J. Brockmann; Walter Wissdorf; David Mueller; Sonja Klee; Valerie Derpmann; Sebastian Klopotoski; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- TP 071 **API-MS Transfer Capillary Flow: Examination of the Downstream Gas Expansion;** Sebastian Klopotoski; Yessica Brachthaeuser; David Mueller; Hendrik Kersten; Walter Wissdorf; Valerie Derpmann; Sonja Klee; Klaus J. Brockmann; Uwe Janoske; Hauke Gregor; Thorsten Benter; *University of Wuppertal, Wuppertal, Germany*
- TP 072 **Performance of an Enclosed Atmospheric Pressure Direct Sample Analysis Source;** Shida Shen; Craig M. Whitehouse; *PerkinElmer, Inc., Branford, CT*
- TP 073 **Bacterial Mass Spectrometry;** Guo-Rung Shiu; Szu-Wei Chou; Wen-Ping Peng; *National Dong Hwa University, Shoufeng, Hualien, TAIWAN*
- TP 074 **A Triple Ionization Source for LC/MS;** Kaveh Jorabchi; Karl Hanold; Jack Syage; *Syagen Technology, Inc., Tustin, CA*
- TP 075 **Simulation of Ion Movement in a 'Long' Gas Dynamic Interface;** Andrew Entwistle¹; Alina Andreyeva²; Sergey Bulovich³; Mikhail Lapushkin⁵; Alexander Bazhenov⁴; Roger Giles¹; Nicolay Gall⁵; ¹*Shimadzu Research Laboratory, Manchester, UK*; ²*Institute for Analytical Instrumentation, Saint-Petersburg, RU*; ³*S.-Petersburg State Polytechnical University, Saint-Petersburg, RU*; ⁴*VNIIOkeangeology Institute, Saint-Petersburg, RU*; ⁵*Physico-Technical Institute, Saint-Petersburg, RU*
- TP 076 **A Truly Handheld, Portable Ambient Ionization Source for Mass Spectrometry Based on a Low-Temperature Plasma (LTP);** Joshua Wiley¹; Jake Shelley²; Robert J. Noll¹; Gary M. Hieftje²; R. Graham Cooks¹; ¹*Purdue University, West Lafayette, IN*; ²*Indiana University, Bloomington, IN*
- TP 077 **Optical and Mass Spectrometric Studies of a Helium Dielectric Barrier Discharge Used as an Ambient Ionization Source;** Jonathan P. Wright; Matthew S. Heywood; Paul B. Farnsworth; *Brigham Young University, Provo, UT*
- TP 078 **A Novel Method for Rapid Vaporization of Samples for Higher Throughput Direct Analysis in Real Time (DART) Mass Spectrometry;** Jordan Krechmer; Joseph Tice;

Elizabeth Crawford; Brian D. Musselman; *IonSense, Inc., Saugus, MA*

HIGH MASS ACCURACY/HIGH PERFORMANCE APPLICATIONS I; 079 - 101

- TP 079 **Quadrupole-Time Of Flight Mass Spectrometry as a Robust Tool for Characterizing Transition Metal Organic Complexes in Synthetic Reaction Samples;** Tao Bo; Chenchen Li; *Agilent Technologies, Beijing, China*
- TP 080 **Determination of an iNOS Inhibitor with Simultaneous Metabolite Identification and Endogenous Biomarker Quantitation using Accurate Mass Orbitrap Mass Spectrometry;** John G. Swales; Richard T. Gallagher; Raimund Peter; *Astrazeneca, Macclesfield, UK*
- TP 081 **A Novel Peptide Mapping Method Using LCMS-IT-TOF with Peptide Accurate Mass Database;** Djohan Kesuma; Zhaqi Zhan; *Shimadzu Asia Pacific, Singapore, SINGAPORE*
- TP 082 **A Novel High Throughput Method Using Full Scan High Resolution Accurate Mass and Online Extraction for Plasma Protein Binding Determination;** Kevin Cook; Mark Dreyer; Keeley Murphy; *Thermo Scientific, San Jose, CA*
- TP 083 **High-Resolution Mass Spectrometry for Analysis of Selected Drugs in Dried Blood Spots;** Sangeeta Tanna; Elizabeth Cocks; Graham Lawson; *De Montfort University, Leicester, UK*
- TP 084 **The Development of High Resolution ESI-MS Methods for Structural Characterization of the Oligosaccharide Antibiotic Everninomicin;** Li-Kang Zhang¹; Birendra Pramanik²; ¹*Merck Research Laboratories, Kenilworth, NJ*; ²*Retired, Parsippany, NJ*
- TP 085 **Ultra High Resolution Accurate Mass LC-MS Analysis of Synthetic Cannabinoids (Spice) and their Metabolites in Urine;** Kristine Van Natta; *Thermo Fisher Scientific, San Jose, CA*
- TP 086 **Profiling Histone H3 Isoforms in Differentiating Human Embryonic Stem Cells using ETD on a dcQTL-Orbitrap;** Chenxi Yang; Aaron Ledvina; Michael S. Westphall; Justin Brumbaugh; Joshua J. Coon; *University of Wisconsin-Madison, Madison, WI*
- TP 087 **A Medium-Throughput in vitro System Incorporating Hepatocyte Cultures and High Resolution Mass Spectrometry for Evaluating Metabolism and Biliary Clearance;** Mary Grubb; *Bristol-Myers Squibb, Pennington, NJ*
- TP 088 **Characterization of Peppermint Essential Oils Grown in Different Areas by Gas Chromatography Ultra High Resolution Time of Flight MS (GC-HRT);** Cory Fix; Joe Binkley; Kevin Siek; Jeffrey Patrick; *LECO Corporation, St. Joseph, MI*
- TP 089 **Rapid and Integrated Qualitative and Quantitative Metabolite Identification Process using a New Quadrupole Time-of-Flight Mass Spectrometer;** Chiuwa Emily Luk; Jonathan L. Josephs; William G. Humphreys; *Bristol-Myers Squibb Co, Princeton, NJ*
- TP 090 **High Throughput Screening using Multiplexed High Resolution Accurate Mass LC/MS;** Keeley Murphy; *Thermo Fisher Scientific, San Jose, CA*
- TP 091 **AP MALDI Produced Ions Inspected with an Exactive Mass Spectrometer;** Kerstin Strupat; Olaf Scheibner; Tabiwang Arrey; Maciej Bromirski;

- Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany
- TP 092 **Metabolite Detection and Identification with Triple TOF High Resolution Mass Spectrometry and Metabolitepolite™ Coupled with Ultra Fast HPLC**; Xiaomei Gu; Ming Yao; Ragu Ramanathan; Ramaswamy Iyer; W. Griffith Humphreys; *Bristol-Myers Squibb, Princeton, NJ*
- TP 093 **Non-targeted Screening of Psychactive Substances in Legal Highs by Nano-LC-chip-Q/ToF**; Emilia Fornal¹; Grzegorz Zukocinski²; Andrzej Wojtyla³; ¹*The John Paul II Catholic University of Lublin, Lublin, Poland*; ²*Maria Curie-Skłodowska University, Lublin, Poland*; ³*Institut of Agricultural Medicine, Lublin, Poland*
- TP 094 **Pomegranate Sample Profiling using Multivariate Data Analysis, High Resolution Chromatography, UV and Time of Flight MS Detection**; Marian Twohig¹; Jennifer Burgess¹; Antonietta Gledhill²; Kenneth Rosnack¹; Paul B Young¹; Dana Krueger³; ¹*Waters Corporation, Milford, MA*; ²*Waters, Manchester, UK*; ³*Krueger Food Laboratories, Inc., Billerica, MA*
- TP 095 **High Performance Metabolic Profiling of Plasma Metabolites of Selected Mammalian Species and Mitochondrial Metabolomics**; Youngja Park; James Roede; Fred Strobel; Tianwei Yu; Dean Jones; *Emory University, Atlanta, GA*
- TP 096 **The Determination of an Optimized FT-ICR Resolving Power to Achieve the Best Spectral Accuracy for Unknown Identification**; Christopher Thompson¹; Ming Gu²; ¹*Bruker Daltonics Inc., Billerica, MA*; ²*Cerno Bioscience, Yardley, PA*
- TP 097 **Analysis of Persistent Organic Pollutants in Complex Matrices by Gas Chromatography – High Resolution Time of Flight Mass Spectrometry (GC-HRT)**; David Alonso; Joe Binkley; Kevin Siek; Viatcheslav Artaev; *Leco Corporation, St. Joseph, MI*
- TP 098 **Identification and Quantitation of Strawberry Polyphenols and Their Metabolites in Human Plasma**; Katarzyna Banaszewski; Indika Edirisinghe, Ph.D; Britt Burton-Freeman, Ph.D; Jack C. Cappozzo; *NCFST/ ITT, Summit-Argo, IL*
- TP 099 **Evaluation of the Performance Improvements Needed in an ESI-QTOF-MS System for Qualitative and Quantitative Multi-Target Pesticide Screening in Food**; Carsten Baessmann¹; Ellen Scherbaum²; Rebekka Loetterle²; Petra Decker¹; Oliver Raether¹; Ilmari Krebs¹; ¹*Bruker Daltonik GmbH, Bremen, Germany*; ²*Chemisches und Veterinäruntersuchungsamt Stuttgart, Stuttgart, Germany*
- TP 100 **Higher HCD Energies and Xtract Function Improve Mapping Ubiquitin Sites using LTQ Velos Orbitrap**; Tatiana N. Boronina¹; Thomas K. Harris²; Hassan Al-Ali²; Robert N. Cole¹; ¹*Johns Hopkins School of Medicine, Baltimore, MD*; ²*University of Miami, Miller School of Medicine,, Miami, FL*
- TP 101 **Can Isotopic Fine Structures of Peptides Improve Protein Identification in Proteomics?**; Saša M. Miladinović¹; Anton N. Kozhinov¹; Michael V. Gorshkov²; Yuri O. Tsybin¹; ¹*Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland*; ²*Institute for Energy Problems of Chemical Physics, Moscow, Russian Federation*
- PROTEIN THERAPEUTICS: STRUCTURAL CHARACTERIZATION; 102 - 129**
- TP 102 **A Strategy for Characterization of the Molecular Weight Distribution of PEG in Biological Samples**; Bethanne Warrack¹; Mark S. Bolgar¹; Purnima Khandelwal¹; Brian Redding²; Petia Shipkova¹; Guodong Chen¹; Adrienne Tymiak¹; ¹*Bristol-Myers Squibb, Princeton, NJ*; ²*Spectrix Analytical Services, Princeton, NJ*
- TP 103 **Disulfide Mapping Verification using Label-Free Analysis**; Michael Athanas¹; Scott Peterman²; David Sarracino²; Bryan Krastins²; Amol Prakash²; Taha Rezaei²; Mary F Lopez²; ¹*VAST Scientific, Cambridge, MA*; ²*Thermo Fisher Scientific, Cambridge, MA*
- TP 104 **Disulfide Mapping: Searching Stressed Glycoprotein Therapeutics for Disulfide Scrambled Species**; Cedric E. Bobst¹; Adriana Z. Kita¹; Igor A. Kaltashov¹; Melanie Lin²; Paul Salinas²; John J. Thomas²; Philip J. Savickas²; ¹*University of Massachusetts, Amherst, MA*; ²*Shire Pharmaceuticals, Cambridge, MA*
- TP 105 **Primary Sequence Determination of a Monoclonal Antibody against α -synuclein using a Novel Mass Spectrometry-based Approach**; Eric Sousa; *Pfizer, Cambridge, MA*
- TP 106 **A Comprehensive ESI-MS Study of Novel Gold(I) Complexes with Antineoplastic Properties**; Maria Stefanopoulou¹; Riccardo Rubbiani²; Andreas Meyer²; Ingo Ott²; William S. Sheldrick¹; Dirk Wolters¹; ¹*Ruhr Universität Bochum, Bochum, Germany*; ²*Technische Universität Braunschweig, Braunschweig, Germany*
- TP 107 **Detection of Novel Degradation for Enzymes with ASG Amino Acid Sequence at Active Site**; Fangfei Yan; William S. Hancock; Shiao-lin Wu; *Northeastern University, Boston, MA*
- TP 108 **An Uncommon Site of Aspartyl Succinimide Formation Leading to Potency Loss in Stability Studies of a Therapeutic Monoclonal Antibody**; Jian Zhang¹; Christopher Yu²; Albert Lee³; Judy H. Chou⁴; Ashraf Amanullah¹; ¹*Genentech-Oceanside Pharma Tech Development, Oceanside, CA*; ²*Genentech-Protein Analytical Chemistry, South San Francisco, CA*; ³*PRTM, Irvine, CA*; ⁴*Tanvex, San Diego, CA*
- TP 109 **Analysis of Isoaspartic Acid in Monoclonal Antibodies**; Min Liu^{1,2}; Janet Cheetham¹; Nina Cauchon¹; Judy Ostovic¹; Da Ren¹; Zhaohui Sunny Zhou²; ¹*Amgen, Inc., Thousand Oaks, CA*; ²*Northeastern University, Boston, MA*
- TP 110 **Characterization of the N-terminally Extended Minor Form of a Recombinant Protein by Mass Spectrometry**; Xidong Feng¹; Kieran F. Geoghegan¹; Jeanne S. Chang¹; Kerry Kelleher²; Paul W. Wu²; Laura Lin²; Francis Rajamohan¹; ¹*PharmaTherapeutics Research, Pfizer Inc., Groton, CT*; ²*BioTherapeutics Research, Pfizer Inc., Cambridge, MA*
- TP 111 **Interactions between Therapeutic Proteins and Acrylic Acid Leachate**; Dengfeng Liu; Yasser Nashed-Samuel; Pavel V. Bondarenko; David N. Brems; Da Ren; *Amgen Inc., Thousand Oaks, CA*

- TP 112 **Unusual Susceptibility to Oxidation of a - Tryptophan-X-methionine- Amino Acid Sequence Present in the Light Chain of a Monoclonal Antibody**; Jay Charlebois; Matthew Mazur; Tun Liu; Qinwei Zhou; Rick Crowley; *Imclone Systems, Branchburg, NJ*
- TP 113 **Comprehensive Peptide Mapping of Antibody Protein, IgG by 2D LC/FT-ICR MS**; Kyu Hwan Park; Sang Beom Lee; Min-sun Kim; Hee Young An; Hyo-Jik Yang; Hyun Sik Kim; *Korea Basic Science Institute, Daejeon, South Korea*
- TP 114 **Sequence Verification Strategy to Enable Biosimilar Monoclonal Antibody Development**; Xian Huang; Anita Colvin; Marie Rose van Schravendijk; *CMC ICOS Biologics, Inc., Bothell, WA*
- TP 115 **Identification of both Proteolytic Cleavage and protease in CHO Cell Production of Glucagon-like-peptide-1 Fusion Antibody by Proteomic Approach**; Qiaozhen Lu¹; Suli Liu¹; Shiaw-Lin Wu¹; William Hancock¹; Mike Tang²; Yonghui Wang²; Haimanti Dorai²; Alex Santiago²; Marguerite Campbell²; Michael Bond²; Michael Lewis²; ¹*Northeastern University, Boston, MA*; ²*Centocor R and D, Radnor, PA*
- TP 116 **Development of Microwave-Assisted Acid Hydrolysis Combined with MS and MS/MS for Determining Terminal Amino Acid Sequences of Proteins**; Yanan Tang; Liang Li; *University of Alberta, Edmonton, Canada*
- TP 117 **Characterization of Pertussis toxoid using mass spectrometry**; Manorama Tummala; Almary Chacon; Shwu-Maan Lee; Edward K. Chess; Peifeng Hu; *Baxter Healthcare Corporation, Round Lake, IL*
- TP 118 **Structural Determination of Drug-substance Related Variants using In-gel Digestion Coupled with Mass Spectrometric Characterization**; Xiaoqing Zheng; Nikita Kulkarni; Ning Li; *Regeneron Pharmaceuticals, Inc., Tarrytown, NY*
- TP 119 **Development of A Tryptic Mapping Method To Optimize the Enzymatic Digestion and Sequence Coverage for A Monoclonal Antibody**; Qilie Luo; Shivkumar Raidas; Biao Shen; Thomas Daly; Ning Li; *Regeneron Pharmaceuticals, Tarrytown, NY*
- TP 120 **Structural Characterization of Antibody Drug Conjugates in Animal Plasma by High Resolution Mass Spectrometry**; Baiyi Xue¹; Sandra Alves¹; Olivier Pasquier²; Patrick Soubayrol²; Jean-Claude Tabet¹; ¹*University Paris VI (UPMC), Paris Cedex 05, France*; ²*Sanofi-Aventis, Chilly-Mazarin, France*
- TP 121 **Analysis of Antibodies using a Novel High Resolution Quadrupole Time-of-Flight Mass Spectrometry Platform and Chromatographic Separations**; Asish Chakraborty¹; St John Skilton¹; Martin Palmer²; Keith Richardson²; Jason L Wildgoose²; Kevin Giles²; Martin Green²; Weibin Chen¹; ¹*Waters Corporation, Milford, MA*; ²*Waters MS Technologies, Manchester, UK*
- TP 122 **Developing New Separation Methods for Intact Protein LC/MS Analysis of Large Proteins**; Jeff Layne; Debra Garrett; Michael McGinley; *Phenomenex, Torrance, CA*
- TP 123 **Mass Spectrometry and Size Exclusion Chromatography Assisted Optimization of Proteins Conjugation to Transferrin**; Son N. Nguyen; Cedric E. Bobst; Igor A. Kaltashov; *University of Massachusetts Amherst, Amherst, MA*
- TP 124 **Characterization of Charge Heterogeneity in a Recombinant IgG1 Monoclonal Antibody by Cation Exchange Chromatography and Mass Spectrometry**; Jinhua (Jenny) Feng; Deepti Sharma; Kenneth Moore; Niluka De Mel; Methal Albarghouthi; Anthony Shannon; Johnson Varghese; Patricia Cash; *MedImmune, Gaithersburg, MD*
- TP 125 **Strategies for Coupling of IEC and SEC to MS Detection for the Separation and Characterization of Related Substances in Biopharmaceuticals**; Wim Decrop; Evert-Jan Sneekes; Remco Swart; *Dionex Corporation, Amsterdam, Netherlands*
- TP 126 **Efficient and Sensitive Characterization of Intact Proteins by High-Performance Sheathless CE-ESI-TOFMS**; Govert Somsen; Rob Haselberg; Gerhardus de Jong; *Utrecht University, Utrecht, Netherlands*
- TP 127 **Characterization of IgG Charge Heterogeneities by IEF Gel Electrophoresis and Peptide Mapping**; Qing Tang; Mike Nedved; Peter Lisi; *Johnson & Johnson, Radnor, PA*
- TP 128 **Evaluation of Charge Variant Enrichment Methods for Use in cIEF Profile Characterization**; Zac Yates; Jessica Bjorklund; Justin Kim; Danielle Pace; *Amgen, Seattle, WA*
- TP 129 **Advancements in Microfluidic Chip Technology for Rapid and Sensitive Detection of Sialylated Glycans from Erythropoietin**; Maggie Bynum; Gregory O Staples; Hongfeng Yin; Kevin Killeen; *Agilent Laboratories, Santa Clara, CA*
- ION MOBILITY: APPLICATIONS; 130 - 159**
- TP 130 **Analysis of Halogenated Aromatic Compounds by Electron Impact ionisation and Ion Mobility Separation on a GC-EI-Q-IMS-ToF**; Gareth Rhys Jones; Keith Richardson; Martin Green; *Waters UK Ltd, Wythenshawe, Manchester, UK*
- TP 131 **Characterization of Ortho-, Meta-, and Para-Isomers in POSS Coupling Systems using Travelling Wave Ion Mobility Mass Spectrometry**; Kai Guo¹; Xiaopeng Li²; Yiwen Li¹; Stephen Cheng¹; Chrys Wesdemiotis^{1, 2}; ¹*Department of Polymer Science, University of Akron, Akron, OH*; ²*Department of Chemistry, University of Akron, Akron, OH*
- TP 132 **Analysis of Isomeric Glucuronide Conjugates by Liquid Chromatography-Ion Mobility Spectrometry with Time-of-Flight Mass Spectrometry**; Joanna E. Barbara; Mark Horrigan; Paul C. Toren; Andrew Parkinson; *XenoTech, LLC, Lenexa, KS*
- TP 133 **The Determination of the Collision Cross-Section of Oligonucleotides Using Traveling Wave Ion-Mobility**; Christopher K. Barlow; David H. Russell; *Texas A&M University, College Station, TX*
- TP 134 **In-source Fragmentation of FAIMS-selected Ions in Combination with Time-of-Flight Mass Spectrometry**; Lauren J. Brown¹; Robert W. Smith¹; Danielle E. Toutoungi²; James C. Reynolds¹; Anthony W.T. Bristow³; Andrew D. Ray⁴; Ashley Sage⁵; Daniel Weston⁴; Ian Wilson⁶;

- Billy Boyle²; Colin S. Creaser¹; ¹Loughborough University, Loughborough, UK; ²Owlstone Ltd., Cambridge, UK; ³AstraZeneca, Macclesfield, Cheshire, UK; ⁴AstraZeneca, Charnwood, Leicestershire, UK; ⁵Agilent Technologies, Stockport, UK; ⁶AstraZeneca, Alderley Park,, Cheshire, UK
- TP 135 **Separation of Isobaric Steroids using Differential Mobility Spectrometry Tandem Mass Spectrometry**; Michael J. Y. Jarvis; Doina Caraiman; J.C. Yves Leblanc; Brad Schneider; Andre Schreiber; Lisa Sapp; Adrian Taylor; AB SCIEX, Concord, Canada
- TP 136 **Analysis of cis/Trans Isomers of Carotenoids using Ion Mobility Time-of-Flight Mass Spectrometry**; Linlin Dong¹; Henry Shion²; Roderick Davis³; Richard B. van Breemen¹; ¹University of Illinois College of Pharmacy, Chicago, IL; ²Waters Corp., Milford, MA; ³Univ. of Illinois at Chicago Research Resources Ctr, Chicago, IL
- TP 137 **Diastereomer Analysis by Travelling Wave Ion Mobility and Density Function Theory**; Iain D G Campuzano¹; Matthew F Bush²; Keith Richardson¹; Scott Gillingwater¹; Claire Beaumont³; Hyungjun Kim⁴; ¹Waters Corporation, Manchester, UK; ²University of Oxford, Oxford, UK; ³DMPK GlaxoSmithKline, Ware, Hertfordshire, UK; ⁴Center for Materials Simulations and Design, Daejeon, Republic of Korea
- TP 138 **Gas Phase Structures of Polyethylene Glycol Ions studied via Ion Mobility and Mass Spectrometry**; Carlos Larriba Andaluz¹; Juan Fernandez De La Mora²; ¹Yale University, New Haven, CT; ²Yale University - Mechanical Engineering Department, New Haven, CT
- TP 139 **Separation and Characterization of 'Protomers' by TWIM-MS(/MS)**; Priscila Lalli¹; Bernardo Iglesias²; Gilberto Sa³; Romeu Daroda³; Vanderlea Souza³; Koiti Araki²; Marcos Eberlin¹; ¹Thomson Mass Spectrometry Laboratory, UNICAMP, Campinas, SP, Brazil; ²University of São Paulo, Institute of Chemistry, São Paulo, SP, Brazil; ³National Institute of Metrology, Inmetro, Duque de Caxias, RJ, Brazil
- TP 140 **Lipid Profiling and Imaging using a MALDI – Ion Mobility – TOF MS**; Gregg M Schieffer¹; Thomas Egan²; Shelley N Jackson¹; Jeremy D Post¹; Ernest K. Lewis²; J. Albert Schultz²; Amina S. Woods¹; ¹NIDA-IRP, NIH, Baltimore, MD; ²Ionwerks, Inc., Houston, TX
- TP 141 **High-throughput Proteomics Platform Demonstrated for Liver Disease Progression Biomarker Verification**; Erin Baker¹; Kristin Burnum¹; Daniel Orton¹; Yehia Ibrahim¹; William Danielson III¹; Kevin Crowell¹; Jon Jacobs¹; Matthew Monroe¹; Gordon Slys¹; Anuj Shah¹; Maria Luna¹; Marina Gritsenko¹; David Purdy²; Deborah L Diamond²; Brian McMahon³; Brenna Simons³; Gordon Anderson¹; Michael Katze²; Mikhail Belov¹; Richard D. Smith¹; ¹Pacific Northwest National Laboratory, Richland, WA; ²University of Washington, Seattle, WA; ³Alaska Native Tribal Health Consortium, Anchorage, AK
- TP 142 **A Mobility Database of Cationized Peptide Ions: Explorations in Metal-Peptide Binding Effects on Structure**; Jonathan Dilger^{1,2}; Matt Glover¹; Stephen Valentine¹; David E. Clemmer¹; ¹Indiana University, Bloomington, IN; ²Naval Surface Warfare Center, Crane Division, Crane, IN
- TP 143 **Analysis of Wound Fluid by Ion Mobility-Mass Spectrometry for Biomolecular Signatures of Diabetic Wound Healing**; Kelly Hines¹; Samir Ashfaq²; Jeffrey Davidson¹; Lily Wang¹; Susan Opalenik¹; John A. Mclean¹; ¹Vanderbilt University, Nashville, TN; ²Texas A&M, College Station, TX
- TP 144 **Revealing the High Molecular Diversity of Miller's Prebiotic Reaction Products by Ultra Performance Liquid Chromatography-Ion Mobility Spectrometry-Mass Spectrometry**; Manshui Zhou¹; Henderson James Cleaves²; Jeffrey L. Bada³; Facundo M. Fernandez¹; ¹Georgia Institute of Technology, Atlanta, GA; ²Carnegie Institute of Washington, Washington, Washington DC; ³Scripps Institution of Oceanography, UCSD, La Jolla, CA
- TP 145 **The Use of a Cross Section Database and Intrinsic Amino Acid Size Parameters for the Improvement of Peptide Identification**; Michael Ewing¹; Stephen Valentine¹; Jonathan Dilger¹; Matt Glover¹; Scott Geromanos²; Chris Hughes³; David E. Clemmer¹; ¹Indiana University, Bloomington, IN; ²Waters Corporation, Middletown, NJ; ³Waters, Manchester, UK
- TP 146 **Use of a High-Resolution Ion Mobility Mass Spectrometer for the Separation and Characterization of Small Organic Molecules in Complex Mixtures**; Jasper Boschmans¹; Frank Sobott¹; Paul Van Schil²; Ernst de Bruijn³; Filip Lemière¹; ¹Center for Proteomics, University of Antwerp, Antwerp, Belgium; ²University Hospital of Antwerp, Antwerp, Belgium; ³Catholic University of Leuven, Leuven, Belgium
- TP 147 **Microfluidic-Coupled Ion Mobility-Mass Spectrometry Platform for Real-Time, Temporally-Resolved Analysis of Excreted Cellular Materials**; Jeffrey Enders¹; Christina Marasco²; Cody Goodwin¹; Jody May¹; Kevin Seale²; John Wikswo³; John A. Mclean¹; ¹Vanderbilt University Department of Chemistry, Nashville, TN; ²Vanderbilt University Biomedical Engineering, Nashville, TN; ³Vanderbilt University Department of Physics, Nashville, TN
- TP 148 **Data independent MALDI Ion Mobility Acquisition for the Analysis of Tryptic Peptides for Proteomic and MALDI Imaging Applications**; Emmanuelle Claude¹; Marie Claude Djidja²; Jim Langridge¹; ¹Waters corporation, Manchester, UK; ²The Institute of Cancer Research, UK, London, UK
- TP 149 **Coupling Nanospray and High Field Asymmetric Waveform Ion Mobility Spectrometry for Gas Phase Fractionation in Tandem Mass Spectrometry Experiments**; Kristian E. Swearingen; Richard S. Johnson; Robert Moritz; *Institute for Systems Biology, Seattle, WA*
- TP 150 **3D Wine Analysis by Traveling Wave Ion Mobility Mass Spectrometry**; Flamys Lena Silva¹; Máira Fasciotti¹; Priscila Lalli¹; Claudio Messias²; Gilberto Sa³; Vanderlea Souza³; Romeu Daroda³; Marcos Eberlin¹; ¹Thomson Mass Spectrometry Laboratory, UNICAMP, Campinas, Brazil; ²School of Agriculture Engineering, UNICAMP, Campinas, Brazil; ³National Institute of Metrology, Inmetro, Duque de Caxias, Brazil

- TP 151 **Localization of Modified Sites on Peptides and Proteins using High-Resolution Differential Ion Mobility Spectrometry**; Alexandre A. Shvartsburg¹; David Singer²; Ralf Hoffmann²; Andrew Creese³; Helen Cooper³; Richard D. Smith¹; ¹PNNL, Richland, WA; ²Inst. für Bioanalytische Chemie, Univ. Leipzig, Leipzig, Germany; ³University of Birmingham, Birmingham, UK
- TP 152 **Multi-dimensional Separations using Ion Mobility-Mass Spectrometry for Natural Product Discovery**; Cody Goodwin^{1,2}; Ruth McNees^{1,2}; Kasia Derewacz^{1,2}; Larissa S. Fenn³; John A. Mclean^{1,2}; Brian Bachmann^{1,2}; ¹Vanderbilt University Department of Chemistry, Nashville, TN; ²Vanderbilt Institute of Chemical Biology, Nashville, TN; ³Waters Corporation, Cary, NC
- TP 153 **Tertiary Structure Analysis of IgG Drug Products using Electrospray Quadrupole Ion-Mobility Time-of-Flight Mass Spectrometry**; Kimura Mikiko; Isamu Terashima; Nobuhiko Kawakami; Sumiko Okamoto; Akiko Koga; Chugai Pharmaceutical Co., LTD, Tokyo, Japan
- TP 154 **Top-Down Structural Characterization of Protein Using ESI-MS-CID-IM-MS**; Nathanael F Zinnel; College Station, TX
- TP 155 **Disulfide Bonds Assignment and Folding Characterization of Peptide Toxins by Ion Mobility Mass Spectrometry**; Loic Quinton; Julien Echterbille; Edwin De Pauw; University of Liege- Labo. Spectrometrie de Masse, Liege, Belgium
- TP 156 **Structure and Topology of the Escherichia coli Cascade Complex Studied by Native Ion Mobility Mass Spectrometry**; Ioana M. Barbu¹; Esther van Duijn¹; Arjan Barendregt¹; Jelle B. Bultema²; Mattijias M. Jore³; Magnus Lundgren³; Edze R. Westra³; Stan J.J. Brouns³; Blake Wiedenheft⁴; Jennifer A. Doudna⁴; Egbert J. Boekema³; John van der Oost³; Albert J.R. Heck¹; ¹Biomolecular Mass Spectrometry and Proteomics, Utrecht, Netherlands; ²Department of Biophysical Chemistry, Groningen, Netherlands; ³Laboratory of Microbiology, Wageningen, Netherlands; ⁴Howard Hughes Medical Institute, CA
- TP 157 **On the Two Gas-Phase Conformers of the Large Complex GroEL and the Malleability of Protein Ions**; Juan Fernandez De La Mora; Yale University - Mechanical Engineering Dept, New Haven, CT
- TP 158 **Ion mobility and Time-of-Flight Mass Spectrometry Characterization of Covalent and Non-Covalent Protein Dimerization**; Ryan Preston¹; Michael Bacica¹; Wade Diehl²; Ben Bolanos²; Robert Murphy¹; ¹Pfizer / CovX, San Diego, CA; ²Pfizer Global R & D, San Diego, CA
- TP 159 **IMS for Characterisation of Impurities in New Biological Entities**; Kim F. Haselmann; Rune Salbo; Peter K Nielsen; Novo Nordisk, Maaloev, Denmark
- TP 161 **Systematic Studies towards Microwave-aided O-glycan Release**; L. Renee Ruhaak; M. Lorna De Leoz; Hyun Joo An; Carlito B. Lebrilla; University of California, Davis, CA
- TP 162 **Exoglycosidase Digestion of Oligosaccharides on a Stainless Steel MALDI Target**; Elisabeth Kast; Elizabeth Higgins; GlycoSolutions, Marlborough, MA
- TP 163 **Glycan Labeling in Aqueous Solution**; Suping Zheng; Steven Becht; PPD, Inc., Middleton, WI
- TP 164 **Isoliquiritigenin (4,2',4'-trihydroxychalcone): a New MALDI Matrix for Neutral Oligosaccharides Analysis**; shuying liu; hongmei yang; Changchun Inst Appl Chem, Changchun, China
- TP 165 **Relationship between Sweet Spot for Glycopeptides in Matrix-Assisted Laser Desorption/Ionization and Specific Crystal Polymorph of 2,5-dihydroxybenzoic Acid**; Hisako Okumura; Takashi Nishikaze; Hiroshi Jinmei; Junko Amano; The Noguchi Institute, Tokyo, Japan
- TP 166 **Ionic Liquid Assisted Electrospray Ionization of Polysaccharides**; Yu-Ling Chang¹; Yuan-Chuan Lee²; Wen-Bin Yang¹; Chung-Hsuan Chen¹; ¹Genomics Research Center, Academia Sinica, Taipei, Taiwan; ²The Biology Department, Johns Hopkins University, Baltimore, MD
- TP 167 **Hydrazide Coated Chip for Capture and on Target Analysis of Glycans**; S. Jake Yang; Hui Zhang; Johns Hopkins Medical Institutions, Baltimore, MD
- TP 168 **Characterization and Quantitation of Synthetic Galactooligosaccharide Isomers by Isotopic Labeling and nanoLC-MS Methods**; Kyle Peacock¹; Mariana Barboza¹; Man Tsui¹; Maartje Franse²; Bill King²; David Mills¹; Carlito Lebrilla¹; ¹University of California, Davis, CA; ²DSM, Delft, The Netherlands
- TP 169 **Differentiating Carbohydrate Positional and Structural Isomers by Ion Mobility Mass Spectrometry**; Weibin Chen; Ying-Qing Yu; Ashish Chakraborty; Henry Shion; St John Skilton; Waters Corporation, Milford, MA
- TP 170 **Glycan Structural Elucidation and Glycan Structural Isomer Differentiation Using A Bioinformatics Tool**; Julian Saba¹; Amy Zumwalt¹; Ningombam Sanjib Meitei²; Arun Apte²; Rosa Viner¹; ¹Thermo Fisher Scientific, San Jose, CA; ²PREMIER Biosoft International, Palo Alto, CA
- TP 171 **Differentiation of the Stereochemistry and Anomeric Configuration for 1-3 Linked Disaccharides via Tandem Mass Spectrometry and ¹⁸O-labeling**; Chiharu Konda¹; Brad Bendiak²; Yu Xia³; ¹Purdue University, West Lafayette, IN; ²University of Colorado Health Sciences Center, Aurora, CO; ³Purdue University, West Lafayette, IN
- TP 172 **Quantification of Plasma Glucose ²H-enrichment from Deuterated Water by LC-MS/MS**; Vera Mendes¹; Ivan Viegas²; Ivana Jarak^{1,3}; John Jones^{1,3}; Bruno Manadas¹; ¹Centre

CARBOHYDRATES: NEW APPROACHES; 160 - 188

- TP 160 **Global Deglycosylation in High Throughput LC-MS Glycomics: Comparing Microwave, Barocycling, and Ultrasound Effects on PNGase F with Human Serum**; Scott R. Kronewitter; Robert A. Heegel; Daniel J. Orton; Heather M. Brewer; Carrie D. Nicora; Daniel

- for Neuroscience and Cell Biology, Cantanhede, PORTUGAL; ²IMAR, University of Coimbra, Coimbra, Portugal; ³Department of Life Sciences, University of Coimbra, Coimbra, Portugal
- TP 173 **Validation of A Surrogate Derivative LC/MS/MS Method for the Determination of Glucose in Human Plasma with [13C6]D-Glucose as a Tracer;** Dawei Zhou¹; Fan Xie²; Zheming Gu^{1,2}; ¹XenoBiotic Laboratories, Inc., Plainsboro, NJ; ²XBL-China, Nanjing, P. R. China
- TP 174 **Quantification of Permethylated N-glycans derived from Human Blood Serum Using Multiple Reaction Monitoring (MRM) LC-MSMS;** Janie Desantos-Garcia; Yunli Hu; Yehia Mechref; Texas Tech University, Lubbock, TX
- TP 175 **Negative Electron Transfer Dissociation Fourier Transform Mass Spectrometry of Sulfated Glycosaminoglycan Carbohydrates;** Jeremy Wolff¹; Franklin E. Leach III²; Mellisa Ly³; Sailaja Arungundram²; Kanar Al-Mafraji²; Andre Venot²; Geert-Jan Boons²; Robert J. Linhardt³; Jon Amster²; ¹Bruker Daltonics, Billerica, MA; ²University of Georgia, Athens, GA; ³Rensselaer Polytechnic Institute, Troy, NY
- TP 176 **Electron Transfer Dissociation (ETD) vs. Electron Capture Dissociation (ECD) of Metal-adducted Oligosaccharides;** Wen Zhou; Kristina Hakansson; University of Michigan, Ann Arbor, MI
- TP 177 **Negative Ion Mode Electron Induced Dissociation (EID) of Glycans;** Di Gao; Kristina Hakansson; University of Michigan, Ann Arbor, MI
- TP 178 **Sulfate Migration during MS Analysis of Sulfated Oligosaccharides;** Diarmuid Kenny; Niclas Karlsson; Gothenburg University, Gothenburg, Sweden
- TP 179 **Electron Transfer Dissociation of Permethylated Oligosaccharides: An Investigation of Different ETD Chemical Reagents for Carbohydrates;** Liang Han¹; Catherine E. Costello²; ¹Boston University, Boston, MA; ²Boston University School of Medicine, Boston, MA
- TP 180 **Mass Spectrometric Method for Determining the Uronic Acid Epimerization in Heparan Sulfate Disaccharides Generated using Nitrous Acid;** Vanessa Mendoza; Xiaofeng Shi; Joseph Zaia; Boston University School of Medicine, Boston, MA
- TP 181 **Investigations of Surface-Induced Dissociation for Site-Specific Glycan Mapping;** Andrew Vanschoiack; Vicki Wysocki; University of Arizona, Tucson, AZ
- TP 182 **Charge-localization Isomers of a Disaccharide-disulfate Observed by the (-) ESI-MS/MS;** Yoko Ohashi^{1,2}; Masayuki Kubota³; Hiroshi Hatase¹; Takashi Hirano¹; Shojiro Maki¹; Haruki Niwa¹; ¹The Univ. of Electro-Communications, Chofu, Tokyo, Japan; ²Brain Sci. Inst., RIKEN, Wako, Saitama, Japan; ³ThermoFisher Scientific Co., Yokohama, Kanagawa, Japan
- TP 183 **Characterizing Mixtures of Glycan Isomers using Multiple Collision Energy Tandem MS;** Javier Satulovsky; Gregory O Staples; Maggie Bynum; Hongfeng Yin; Kevin Killeen; Agilent Laboratories, Santa Clara, CA
- TP 184 **Separation and Characterization of Heparan Sulfate Tetrasaccharide Isomers Differing Only in Hexuronic Acid Stereochemistry Using ESI-FAIMS and FTICR-MS/MS with EDD;** Muchena J. Kailemia¹; Franklin E. Leach III¹; Sailaja Arungundram¹; Kanar Al-Mafraji¹; Andre Venot¹; Mellisa Ly²; Tatiana Laremore³; Desmond Kaplan⁴; Melvin A. Park⁴; Robert J. Linhardt²; Jon Amster¹; Geert-Jan Boons¹; ¹University of Georgia, Athens, GA; ²Rensselaer Polytechnic Institute, Troy, NY; ³Penn State, University Park, PA; ⁴Bruker Daltonics, inc., Billerica, MA
- TP 185 **Identification of Sialic Acid Linked to Internal N-acetylhexosamine Residues on Mucin Glycoproteins with Negative Ion Mode CID Fragmentation;** Kristina Thomsson; Gunnar C. Hansson; University of Gothenburg, Gothenburg, Sweden
- TP 186 **Differentiation of Underivatized Monosaccharides by Atmospheric Pressure Chemical Ionization Quadrupole Time-of-Flight Mass Spectrometry (APCI/QTOF-MS);** Zhengqian Zhu; Liguang Song; John Bartmess; Department of Chemistry, University of Tennessee, Knoxville, TN
- TP 187 **Collision-induced Dissociation versus Electron Transfer Dissociation of Metal-adducted Oligosaccharides;** Mallikharjuna Bogala; Carolyn J. Cassidy; University of Alabama, Tuscaloosa, AL
- TP 188 **Detection and Identification of Intact Anionic Polysaccharides by Ion-Pair Reversed Phase Chromatography and Source-Induced Fragmentation Mass Spectrometry;** Christopher Jones; Liqiong Fang; Edward K. Chess; Peifeng Hu; Baxter Healthcare Corp., Round Lake, IL
- METABOLOMICS: IDENTIFICATION OF UNKNOWN METABOLITES; 189 - 209**
- TP 189 **Regioselectivity of Human UDP-Glucuronosyl-transferase and Sulfotransferase Isozymes in Flavonoid Biotransformation by Metal Complexation and Tandem Mass Spectrometry;** Scott A. Robotham; Jennifer S. Brodbelt; University of Texas at Austin, Austin, TX
- TP 190 **Identifying Previously Undocumented Glutamine Conjugates Utilizing MS/MS Fragmentation Patterns and Accurate Mass Data;** John J Lennon; Anne M. Evans; Klaus Peter Adam; Matthew Mitchell; Metabolon, Inc., Durham, NC
- TP 191 **Characterization and Profiling of Novel Diterpene Glycosides from Glandular Trichomes of the Wild Tomato Relative *Solanum habrochaites*;** E.A. Prabodha Ekanayaka; Chao Li; A. Daniel Jones; Michigan State University, East Lansing, MI
- TP 192 **UHPLC and Collision Induced Dissociation of Diferulate Isomers (Cell Wall Crosslinkers) Released during Hydrolysis of Cellulosic Biomass;** Ramin Vismeh¹; Fachuang Lu²; Shishir Chundawat¹; John Ralph²; Venkatesh Balan¹; Bruce Dale¹; A. Daniel Jones¹; ¹Michigan State University, East Lansing, MI; ²University of Wisconsin, Madison, WI
- TP 193 **Towards Structure Elucidation of Flavonoid Compounds in Complex Mixtures by Higher-**

- energy Induced Collisional Dissociation (HCD) on an LTQ-Orbitrap**; Mikel R. Roe^{1,2}; Jerry D. Cohen^{1,2}; Adrian D. Hegeman^{1,2}; ¹Microbial and Plant Genomics Institute, Saint Paul, MN; ²University of Minnesota, Saint Paul, MN
- TP 194 **Studying Fragmentation Pathways of Multiple-Cyclic Diterpenoid Phytohormone Gibberellins under CID for Unknown GA Identification**; Baichen Zhang; Leslie M. Hicks; Danforth Center, St. Louis, MO
- TP 195 **Identify Unknown Compounds in GC-MS Based Metabolic Profiling: GC-APCI-TOF Analysis of a Corynebacterium Glutamicum ΔprpD2 Mutant Strain**; Aiko Barsch¹; Marcus Persicke²; Jens Plassmeier²; Karsten Niehaus²; Gabriela Zurek¹; Sandy Yates³; ¹Bruker Daltonik GmbH, Bremen, Germany; ²Centrum für Biotechnologie, Universität Bielefeld, Bielefeld, Germany; ³Bruker Daltonics, Fremont, CA
- TP 196 **Disclosing Oxidatively Damaged Metabolites under Homeostatic Control of Mammalian Cells by LC-MS-based Metabolomics**; Daiki Setoyama; Yoshinori Fujimura; Kiyoshi Sakai; Kazuhiro Ichikawa; Hiroyuki Wariishi; Daisuke Miura; Kyushu University, Fukuoka, Japan
- TP 197 **Characterizing Small Molecules in Biological Extracts using IntelliXtract Data Processing on High Resolution Accurate Mass Time-of-Flight Data**; Margaret Antler¹; Graham A. McGibbon¹; Vitaly Lashin¹; Jeffrey S. Patick²; Kevin Siek; ¹ACD/Labs, Toronto, Canada; ²LECO Corporation, Saint Joseph, MI
- TP 198 **Differential Metabolomic Analysis of Corn Leaf Extracts by Liquid Chromatography - High Resolution Time of Flight Mass Spectrometry (LC-HRT)**; Jan Hazebroek; Pioneer Hi-Bred International, Johnston, IA
- TP 199 **Mass spectrometric Identification of HOCl-Mediated Heme Degradation Products of Hemoglobin**; Jaeman Byun¹; Dhiman Maitra²; Ghassan Saed²; Husam Abu-Soud²; Subramaniam Pennathur¹; ¹University of Michigan, Ann Arbor, MI; ²Wayne State University, Detroit, MI
- TP 200 **Core-structure Study by MS³ analysis for Unknown Metabolite Identification**; Yiman Wu; Avalyn Lewis; Azeret Zuniga; Liang Li; University of Alberta, Edmonton, Canada
- TP 201 **Targeted Approach for Data Mining Untargeted Metabolomics Study**; Syed Salman Lateef; Sudha Rajagopalan; Siji Joseph; Nilanjan Guha; Yugandhar Reddy; Agilent Technologies India Pvt.Ltd, Bangalore, India
- TP 202 **An LC-MS/MS Spectral Library Containing Thousands of Compounds Facilitates Metabolite Identification in Yeast Exposed to Immunosuppressant Drugs**; Stefan Jenkins; Steven M. Fischer; Theodore R. Sana; Agilent Technologies, Inc., Santa Clara, CA
- TP 203 **Retention Index as Filter for Molecular Formulas in Derivatization based GC-MS**; Sangeeta Kumari; Tobias Kind; Oliver Fiehn; Metabolomics Fiehn Lab, Genome centre, UC Davis, Davis, CA
- TP 204 **A Workflow for Metabolite Identification from LC-MS/MS data**; Bin Zhou¹; Junfeng Xiao; Habtom Resson²; ¹ECE Department, Virginia Tech, Falls Church, VA; ²Lombardi Cancer Center, Georgetown University, Washington, DC
- TP 205 **Development of Algorithm Enabling Data-driven Determination of Elemental Composition based on Isotopic Peak Ratio Observed by Ultrahigh-resolution FT-ICR-MS**; Tatsuhiko Nagao; Daichi Yukihiro; Yoshinori Fujimura; Daisuke Miura; Hiroyuki Wariishi; Kyushu University, Fukuoka, Japan
- TP 206 **Fragmentation Patterns and Rat Metabolite Identification of 4-anilinoquinazoline-based Compounds by LC-MS and MS/MS**; Alexandre F. Gomes¹; Silvana A. Rocco²; Kleber G. Franchini²; Fabio C. Gozzo¹; ¹IQ - University of Campinas, Campinas, Brazil; ²FCM - University of Campinas, Campinas, Brazil
- TP 207 **Diagnostic Neutral Losses and Common Fragment Ions for Putative Identification of Amine-containing Metabolites**; Jiamin Zheng; Azeret Zuniga; Avalyn Stanislaus; Liang Li; University of Alberta, Edmonton, Canada
- TP 208 **Computation of Fragmentation Trees from Metabolite GC/MS Data**; Franziska Hufsky^{1,2}; Florian E Rasche¹; Sebastian Böcker¹; ¹Friedrich-Schiller-University Jena, Jena, GERMANY; ²Max Planck Institute for Chemical Ecology, Jena, Germany
- TP 209 **Improved Metabolite Identification using Cross-Platform LC-MS Retention Prediction By Flow Rate and Gradient Profile Back-Calculation**; Paul G. Boswell; Jonathan R. Schellenberg; Peter W. Carr; Jerry D. Cohen; Adrian D. Hegeman; University of Minnesota, Minneapolis/St. Paul, MN
- DRUG METABOLISM: QUALITATIVE ANALYSIS; 210 - 234**
- TP 210 **New Developments in the Synthesis of Drug/Xenobiotic Metabolites and the Prediction thereof by Means of On-line Electrochemistry/MS**; Joann Purkerson¹; Agnieszka Kraj²; Hendrik-Jan Brouwer²; Martin Eysberg²; Jean-Pierre Chervet²; ¹Antec USA, Palm Bay, FL; ²Antec, Zouterwoude, Netherlands
- TP 211 **Direct Detection, Structural Characterization and Isolation of Novel Oxidative Chemical Matter Using an Electrochemistry-MS Platform**; Smriti Khara¹; Chris Fotsch¹; Joann Purkerson²; Paul Schnier¹; Steve Hollis¹; ¹Amgen Inc., South San Francisco, CA; ²Antec (USA), Palm Bay, FL
- TP 212 **Rapid Generation and Identification of Oxidative Metabolites by Electrochemistry Coupled Online to LC/ESI-MS**; Hannah Simon; Uwe Karst; University of Münster, Münster, Germany
- TP 213 **Simulation of the Metabolism of the Anti-platelet Drug Ticlopidine with Electrochemistry/Liquid Chromatography/Mass Spectrometry**; Helene Faber; Uwe Karst; University of Münster, Münster, Germany
- TP 214 **Investigation of the Skin Sensitizing Potential of Eugenol and Ioeugenol by Electrochemistry Coupled to Liquid Chromatography and Mass Spectrometry**; Daniel Melles¹; Torsten Vielhaber¹; Anne Baumann¹; Raniero Zazzaroni²; Uwe Karst¹; ¹University of Muenster, Muenster, Germany; ²Unilever, Bedford, UK

- TP 215 **Glutathione S-Transferase pi Trapping Approach for the Characterization of Reactive Metabolites in Human Liver Microsomes;** Hideo Yukinaga; Haruo Iwabuchi; Osamu Okazaki; Takashi Izumi; *Daiichi Sankyo Co., Ltd., Tokyo, Japan*
- TP 216 **High Resolution Mass Spectrometry: Screening Strategies Using a Hybrid Linear Ion Trap-Orbitrap to Avoid the Misidentification of Reactive Metabolites;** Regina Nardi; Dilrukshi Ramanathan; *Kean University, Union, NJ*
- TP 217 **A Neutral-Loss Searching Algorithm for High Resolution UPLC-MS Data Processing: Application for Rapid Detection of Glutathione Conjugate;** Xiaochun Zhu; Mike Hayashi; Raju Subramanian; *Amgen, Inc., Thousand Oaks, CA*
- TP 218 **Enaminone as a Reactive Metabolite: Studies towards Understanding of Idiosyncratic Toxicity of Duloxetine;** Min Yang; Mahendra D. Chordia; Timothy L. Macdonald; *University of Virginia, Charlottesville, VA*
- TP 219 **LC-MS/MS Study of Ginseng Metabolism;** Carmal Seto¹; Suma Ramagiri¹; Takeo Sakuma¹; Ed Lui^{2,3}; Matthew Barnes^{2,3}; Lique Coolen^{2,3}; ¹AB SCIEX, Concord, Canada; ²Ontario Ginseng Innovation & Research Consortium, London, Canada; ³University of Western Ontario, London, Canada
- TP 220 **Evaluation of Different Trapping Agents used to Identify Reactive Intermediates in Biotransformation Studies;** Michael Kiffe; Werner Gertsch; Reiner Aichholz; Joachim Blanz; Jérôme Dayer; Thierry Delemonté; Philippe Ramstein; *Novartis Pharma AG, Basel, Switzerland*
- TP 221 **Metabolite Soft Spot Identification using Fragment Interpretation Functions Integrated within Metabolite ID Software;** Alina Dindyal-Popescu; Carmal Seto; Shaokun Pang; Hesham Ghobarah; *AB SCIEX, Concord, Canada*
- TP 222 **Evaluation of Chemically Intelligent Acquisition and Processing Tools as a Platform for Discovery Metabolite Identification;** Russell J Mortishire-Smith¹; Pascale Proost¹; Filip Cuyckens¹; Gary Impey²; Hesham Ghobarah²; Carmal Seto²; ¹Johnson & Johnson PR&D, Beerse, BELGIUM; ²AB SCIEX, Concord, ON
- TP 223 **Automation of Metabolite Identification using Mass-MetaSite and High Resolution Mass Spectrometry;** Andreas Brink¹; Ruth Haas¹; Kirsten Eickhoff¹; Ismael Zamora²; Fabien Fontaine²; Axel Paehler¹; ¹F. Hoffmann-La Roche Ltd, Basel, Switzerland; ²Lead Molecular Design, Sant Cugat del Valles, Spain
- TP 224 **IsoCount: Software-assisted Localization of Biotransformations by High-Resolution Mass Spectrometry;** Wijnand Mooij³; Leclercq Laurent¹; Michael Hartshorn³; Russell Mortishire-Smith¹; Alastair Hill³; Filip Cuyckens¹; Jeff Goshawk²; Stephen McDonald²; Alan Millar²; ¹Johnson & Johnson, Beerse, BELGIUM; ²Waters, Manchester, UK; ³Dotmatics, Bishops Stortford, UK
- TP 225 **Novel Tools for Automated Metabolite Identification, Biotransformation Localization and Quantitation using UPLC-QTOF MSE;** Stephen McDonald¹; Mark Wrona¹; Jeff Goshawk²; Alan Millar¹; ¹Waters Corporation, Milford, MA; ²Waters, Manchester, UK
- TP 226 **High-resolution Accurate Mass-Measurements and Metabolite Identification: an Automated Approach using Fragment Prediction in Combination with Fragment Ion Search (FISH);** Paul-Gerhard Lassahn; *Swiss BioAnalytics AG, Birsfelden, Switzerland*
- TP 227 **Identification of *in vitro* Lycopene Metabolites using Isotope Pattern Dependent MS-MS;** Jeffrey H. Dahl¹; Richard B. Van Breemen²; ¹Shimadzu Scientific Instruments, Columbia, MD; ²University of Illinois, Chicago, IL
- TP 228 **Elucidating the Metabolism of Oxyntomodulin Like Peptide "A" Using LC/MS/MS and Radio-chromatography;** Shakey Quazi; *Pfizer, Andover, MA*
- TP 229 **Characterization of Biliary Metabolites of the Potent 5-HT1D Receptor Antagonist, Elzasonan in Rats by HPLC/RAM/ESI/MS/MS;** Kevin Colizza²; Mithat Gunduz²; scott obach³; Amin M. Kamel¹; ¹Novartis Institutes for BioMedical Research, Cambridge, MA; ²Novartis, Cambridge, MA; ³Pfizer Global Res.&Dev, Groton, CT
- TP 230 **In vitro metabolism Studies of the GABAA receptor partial agonist [14C]CP-409,092 and Sumatriptan in Human Liver Mitochondria using HPLC/RAM/ESI/MS/MS;** Amin M. Kamel¹; Kevin Colizza²; Mithat Gunduz²; Scott Obach³; ¹Novartis Institutes for BioMedical Research, Cambridge, MA; ²Novartis, Cambridge, MA; ³Pfizer, Groton, CT
- TP 231 **Coupling of UPLC with Fast Fraction Collection-Microplate Scintillation Counting and Mass Spectrometry for Profiling of Radiolabeled Drug Metabolites in Biological Matrices;** Wei Tong; Swapan Chowdhury; Mark Wrona; Kevin Bateman; *Merck Research Laboratory, Rahway, NJ*
- TP 232 **Metabolite Identification From Dried Blood Spot Using Capillary LC – High Resolution OrbitrapTM Mass Spectrometry;** Jianwei Shen; *Abbott Lab, Abbott Park, IL*
- TP 233 **Evaluation of an Integrated LC-MS + offline NMR platform In Identification of Drug Metabolites;** Rose Gathungu¹; Craig Masse²; Paul Vouros¹; Roger Kautz¹; ¹Northeastern University, Boston, MA; ²CoNCERT Pharmaceuticals, Lexington, MA
- TP 234 **Inter-species Comparison of Metabolite Profiles for Propranolol in Rat and Human Liver Microsomes;** Yi Tao; Quan Li; Wanxian Chen; Jianfeng Huang; Ping Chen; Weiqing Chen; Alicia Du; *Chempartner Co., Shanghai, CHINA*
- DRUG METABOLISM: QUANTITATIVE ANALYSIS I; 235 - 252**
- TP 235 **Blood-Plasma Partitioning Effects During DBS-Plasma Cross-Validation of a Carboxylic Acid-Containing Compound and its Acyl Glucuronide Metabolite;** Robert Rieger; A. Dale Wright; Jason Neale; Patrice Lee; Ronald Franklin; *Array BioPharma, Boulder, CO*
- TP 236 **Examples of dried Blood Spot Sampling and Analysis to Improve Paediatric Medicine;** Graham Lawson¹; Hussain Mulla²; Parul Patel¹; Sangeeta Tanna¹; ¹De Montfort University,

- Leicester, UK; ²University Hospitals of Leicester NHS Trust, Leicester, UK
- TP 237 **Evaluation on Chemically Treated DBS Cards for Stability Enhancement of Enzyme Labile Molecules in Quantitative LC-MS/MS Bioanalysis;** Buyun Chen; Wenkui Li; John P Doherty; Harold T Smith; Francis LS Tse; *Novartis Institutes for Biomedical Research, East Hanover, NJ*
- TP 238 **Overcoming the Obstacles of Performing Dilutions and Internal Standard Addition to DBS Analysis using HPLC-MS/MS;** Chad Christianson; Shane Needham; Casey Johnson; *Alturas Analytics, Inc., Moscow, ID*
- TP 239 **Electrochemistry with Liquid Chromatography/Inductively Coupled Plasma Mass Spectrometry for Quantitative Investigation of the Metabolic Pathway of Amodiaquine and Diclofenac;** Jens Künemeyer; Helene Faber; Christoph Alexander Wehe; Uwe Karst; *University of Münster, Münster, GERMANY*
- TP 240 **Determination of GMI-1070, a Rationally Designed Synthetic Glycomimetic, in Human Plasma and Urine by LC-MS/MS;** Kumar Ramu¹; Henry Flanner²; Arun Sarkar²; Mojdeh Vahid¹; Crystal Nguyen¹; Yongdong Zhu¹; Hongkun Liang¹; ¹QPS, LLC., Newark, DE; ²GlycoMimetics, Inc, Gaithersburg, MD
- TP 241 **UPLC-MS/MS Method for Quantitation of Intact Glutathione GSH and its Oxidized Form GSSG in Bile;** Lei Cao; Daniel Waldon; Yohannes Teffera; John Roberts; Mary Wells; Zhiyang Zhao; *Amgen Inc, Cambridge, MA*
- TP 242 **High Resolution Accurate Mass MS and MS/MS Methods for Pharmacokinetics Analysis of Clozapine and Quantitation/Characterization of its Metabolites in Rat Plasma;** Na Pi¹; Shane E. Tichy¹; Adam C. Amaral²; Jakal Amin²; Panos Hatsis²; ¹Agilent Technologies, Inc., Santa Clara, CA; ²Novartis Institutes, Cambridge, MA
- TP 243 **Detection and Confirmation of The Metabolites Of AZD6495 using The Automated Collection of Simultaneous MRM and Full Scan LC/MS/MS;** Rob Plumb¹; Paul Rainville¹; Joanne Mather²; Ian Wilson³; Ignatius Kass²; ¹Waters, Milford, MA; ²waters corporation, Milford, MA; ³Astra Zeneca, Maccelsfield, UK
- TP 244 **A Simple and Sensitive Method for Determination of Rifampicin and Rifampicin-Quinone in Human Plasma by HR-MS with Target MS/MS Mode;** Jun Wang¹; Lijia Zhu¹; Jiazhang Xu¹; Ying Wang²; Weiguo Tan¹; Rong'an Li¹; Xiaoli Liu¹; Yingzhou Yang¹; ¹Shenzhen Center for Chronic Disease Control, Shenzhen, China; ²Agilent Technologies, Shanghai, China
- TP 245 **Quantification of Acamprosate in Dog Plasma Using API-5500 QTRAP Systems under High Resolution with Fast Scan;** Guangchun Zhou; Chen-Yu Wang; Urzula Lorent; Erin Goodin; Maria Hackman; Yong-Xi Li; *Medpace, Cincinnati, OH*
- TP 246 **Comparative Quantification of 3rd Generation Cephalosporins by Low and High Resolution Parent and Fragment Ion Detection;** Mustafa Varoglu; Lieu Nguyen; Heather Blanchette; *Cubist Pharmaceuticals, Lexington, MA*
- TP 247 **Quantitation of Metabolites in Plasma Samples by UV-MS Correction using a Dual-cell-Linear Ion Trap Mass Spectrometer;** Yingying Huang; Tim Stratton; Julie Horner; August Specht; *Thermo Fisher Scientific, San Jose, CA*
- TP 248 **Tracking Metabolism of the NSAID Sulindac: From HPLC-UV to HPLC-MS/MS;** Alan W. Taylor; Gayle A. Orner; Sharon K. Krueger; *Oregon State University, Corvallis, OR*
- TP 249 **Analytical Strategies to Evaluate the Activity of Nine Major CYP450 Enzymes Involved in Drug Metabolism by Liquid Chromatography-Quadrupole Mass Spectrometry;** Maxim Maheux; Claude-Paul Lafrance; *TransBIOTech, Levis, Canada*
- TP 250 **Application of UPLC Nanotile MS/MS in the Analysis of Samples from Chimeric Mice with Humanised Livers;** Richard Gallagher¹; Raimund Peter¹; Kathryn Pickup¹; Kristin Samuelsson¹; Ian Wilson¹; Leonard Dillon²; David Douce²; ¹AstraZeneca, Macclesfield, UK; ²Waters Corp, Manchester, UK
- TP 251 **UPLC-ES/MS/MS Analysis of Amphetamine, Methamphetamine and Methylphenidate in Rat Serum using Supported Liquid Extraction;** Nathan C. Twaddle¹; Michelle M. Vanlandingham¹; Mark S. Levi¹; John F. Bowyer¹; Lee D. Williams²; Daniel R. Doerge¹; ¹NCTR/FDA, Jefferson, AR; ²Biotage, Inc., Cardiff, Wales, UK
- TP 252 **Generic Approaches to Low Level Detection for the Analysis of Inhaled Drugs;** Jeremy Cook; Mohammed Abrar; John Allanson; Stephen Clarke; *Unilabs YBS, York, UK*
- SMALL MOLECULE: QUANTITATIVE ANALYSIS; 253 - 282**
- TP 253 **Sensitive and High Throughput LC/MS Quantitation Methods for Central Nervous System Drug Screening using MRM and Accurate Mass Techniques;** Xiao Ding¹; Hesham Ghobarah²; Xiaolin Zhang¹; Xingrong Liu¹; Bianca Liedner¹; Gauri Deshmukh¹; Brian Dean¹; ¹Genentech, South San Francisco, CA; ²AB SCIEX, Concord, Ontario, Canada
- TP 254 **Developing a High Sensitivity Method to Quantify Rapamycin in Pig tissues and Blood;** Fu Deng¹; Rong Yang¹; Wei Qi¹; Mingyue Hu¹; Yingying Liu¹; Zhirong Tang²; Chengyun Yue²; Yangyang Guo²; Changsheng Wu²; Yan Hu²; Qianqian Zhang¹; Alicia Du¹; ¹Shanghai ChemPartner Co. Ltd., Shanghai, P. R. China; ²MicroPort Medical (Shanghai) Co. Ltd., Shanghai, P. R. China
- TP 255 **On-Column Derivatization for the Determination of Bisphosphonates in Human Urine;** Nicolas Jean; Sylvain Lachance; Nadine Boudreau; Sofi Gagnon-Carignan; Ann Levesque; *PharmaNet Canada, Québec, Canada*
- TP 256 **Bioanalytical Assay Challenges and SOLUTIONS for a Liposome Encapsulated Drug, Muramyl Tripeptide Phosphatidylenthanolamine in Human Plasma;** Melissa Meyer¹; Zong-Ping Zhang¹; GERALYN KOCAN¹; Matthew Gray¹; Martin Paton²; Mark G. Qian²; ¹PPD, Middleton, WI; ²Millennium Pharmaceuticals, Inc., Cambridge, MA
- TP 257 **Using ICP-MS Detection for the Determination of Bismuth in Human Blood**

- TP 258 **and Plasma Samples**; Nadia Savard; Sébastien Gagné; François Viel; Brigitte Pellerin; Nadine Boudreau; *PharmaNet Canada, Québec, Canada*
- TP 259 **High Throughput Analysis of Biological Samples Containing Trace Metals with Limited Down Time by ICP-MS**; Sébastien Gagné; François Viel; Nadine Boudreau; Sylvain Lachance; Sofi Gagnon-Carignan; Ann Lévesque; *PharmaNet Canada, Québec, Canada*
- TP 260 **Converting LC/MS/MS Plasma Assay to DBS Assay: Challenges and Comparison of Two Riluzole Assays in Different Matrices**; Min Meng; Yue Zhao; Weiwei Yuan; Troy Voelker; Scott Reuschel; *Tandem Labs, Salt Lake City, UT*
- TP 261 **Validation of an LC/MS/MS Method for the Determination of Oxycodone in Human Plasma**; Adam Grenier; Lawrence Andrade; Teresa Pekol; *Smithers Pharma, Wareham, MA*
- TP 262 **A New LC-MS Approach for Generic Screening and Quantitation of Potential Genotoxic Alkylation Compounds without Derivatization**; Pierangela Palma; Giorgio Famiglini; Veronica Termopoli; Helga Trufelli; Achille Cappiello; *LC-MS Laboratory, DiSTeVA, University of Urbino, Urbino, Italy*
- TP 263 **Thickness Monitoring of Ultrathin Layers by Laser Desorption Mass Spectrometry**; Natalia Mavrinskaya; Hans Joachim Räder; Klaus Müllen; *MPI for Polymer Research, Mainz, Germany*
- TP 264 **Internal Standard Addition for Dried Blood Spot Analysis based on Flow Through Desorption Solid-phase Extraction and Mass Spectrometry**; Lena Knecht; Bert Ooms; Emile Koster; *Spark Holland, Emmen, Netherlands*
- TP 265 **Quantitative Analysis of Dichloromethylene-Bisphosphonic Acid in Human Plasma by Nanoprobe based Affinity Mass Spectrometry**; Wei Hsu¹; Yi-Chi Ho¹; Mei-Chun Tseng¹; An-Kai Su¹; Huan-Ting Wu²; Chun-Cheng Lin²; Ming-Ren Fuh³; Yu-Ju Chen¹; ¹*Institute of Chemistry, Academia Sinica, Taipei, Taiwan*; ²*Department of Chemistry, Tsing Hua University, Hsinchu, Taiwan*; ³*Department of Chemistry, Soochow University, Taipei, Taiwan*
- TP 266 **Impact of Carry-over on the Mouse Plasma Pharmacokinetics of Ketoconazole**; Angela Hayes; Ross Baker; Florence Raynaud; *Institute of Cancer Research, Sutton, UK*
- TP 267 **The Use of MRM³ Mode for Rapid Analysis of 1 α ,25(OH)₂-Vitamin D₃ in Serum and Plasma**; Jan Lembcke¹; Axel Besa¹; Barbara Hoyer²; Kristina Klinger²; Katarina Hartmann²; Franz Paul Armbruster²; ¹*AB SCIEX, Darmstadt, Germany*; ²*Immundiagnostik AG, Bensheim, Germany*
- TP 268 **Development and Validation of a Dried Blood Spot Assay for the Determination of Midazolam in Human Whole Blood by LC-MS/MS**; Guy Havard; Marie-Claude Théberge; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Québec, Canada*
- TP 269 **Analyte and Internal Standard Cross Signal Contributions in Mass Spectrometric Detection and their Impact on the Quantitation by LC-MS**; Aimin Tan; Isabelle A. Lévesque; Isabelle M. Lévesque; François Viel; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Québec, Canada*
- TP 270 **A Novel Automated LCMSMS Method for the Simultaneous Determination of Levothyroxine (T₄) and Liothyronine (T₃) in Human Serum**; Gilles Provencher; François Viel; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Québec, Canada*
- TP 271 **LC/MS/MS Analysis of Doxercalciferol and its Main Metabolite in Human Plasma at Low Picogram Level**; Guy Havard; Sylvain Lachance; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Québec, Canada*
- TP 272 **Evaluation of Hemolysis Effect during Sample Collection and Handling to Mimic Incurred Samples during LCMSMS Method Validation**; Sébastien Gagné; Sylvain Lachance; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Québec, Canada*
- TP 273 **An Ultrasensitive LCMSMS Method for the Determination of Formoterol in Human Plasma at Femtogram Level**; Isabelle M. Lévesque; François Viel; Sylvain Lachance; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Québec, Canada*
- TP 274 **Ultra Low Picograms Determination of a Glucocorticoid in Human Plasma**; Nadia Smith; Nicolas Jean; Nathalie Pelletier; Sylvain Lachance; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Québec, Canada*
- TP 275 **Quantification of 1-aminocyclopropane-1-carboxylic Acid in Plant Tissues by Hydrophilic Interaction Liquid Chromatography Tandem Mass Spectrometry**; Xiumei Han¹; Vera Cekic¹; Justin Yow²; Monika Lafond¹; L. Irina Zaharia¹; Suzanne R. Abrams¹; ¹*NRC-Plant Biotechnology Institute, Saskatoon, Canada*; ²*McMaster University, Hamilton, Canada*
- TP 276 **Quantitative Analysis of Hop Prenylflavonoids in Human Serum using UHPLC-MS-MS**; Yang Yuan¹; Dejan Nikolic¹; Brian Wright¹; Jeffrey H. Dahl²; Richard B. van Breemen¹; ¹*University of Illinois College of Pharmacy, Chicago, IL*; ²*Shimadzu Scientific Instruments, Columbia, MD*
- TP 277 **Improved Strategies for Analyzing Dried Blood Spots as a Sampling Technique for the Quantitative Determination of Guanfacine in Clinical Studies**; Yuanli Li¹; Daniel Eikel¹; Tom Alexander¹; Karin Dillon¹; John Buckholz¹; Jack Henion¹; Richard Abbott²; Phillip Wang³; ¹*Advion BioServices Inc, Ithaca, NY*; ²*Shire Pharmaceutical Development Ltd., Basingstoke, UK*; ³*Shire Development, Inc., Wayne, PA*
- TP 278 **Stability Issues and Method Development of a Polar Phenolic Quaternary Amine Compound in Human Plasma by LCMSMS**; Valérie Montminy; Nicolas Piquet; Sylvain Lachance; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Québec, Canada*
- TP 279 **Confirmation of Drug Delivery after Liver Chemoembolization: Direct Tissue Doxorubicin Measurement by LC-MS-MS**; Sigrid Baumgarten¹; Benediccta O. Omene²; Ron C. Gaba²; Richard B. van Breemen¹; ¹*University of Illinois, College of Pharmacy, Chicago, IL*; ²*University of Illinois, Department of Radiology, Chicago, IL*
- TP 280 **Determination of Butyrate-¹³C₄ in Rat Plasma Using Derivatization and LC-MS/MS**

- Techniques;** Moo-Young Kim¹; Yansheng Liu¹; Marsha Luna¹; Gene Ray¹; Dari Dadgar¹; Roger Nolan²; Jerzy Szewczyk²; ¹KCAS, LLC, Shawnee, KS; ²BioKier, Chapel Hill, NC
- TP 280 **Overcoming Challenges in Development of a single extraction LC/MS/MS Method for an Unstable Metabolic Compound Forming 2 Chemically Different Metabolites;** Ryan Adler; Yue Zhao; Laixin Wang; Min Meng; Troy Voelker; Todd Chappell; *Tandem Labs, Salt Lake City, UT*
- TP 281 **Evaluation of Compounds with Differing Physicochemical Properties and DBS Card Lot Variability on the Application of DBS Sampling using UFLC-MS/MS;** Roger Pham; Philip Wong; Earl Moore; Mary Wells; Guifen Xu; Bernd Bruenner; Christopher James; *Amgen, Inc., Thousand Oaks, CA*
- TP 282 **An LC-MS/MS based Assay for Screening Dithiothreitol Reactivity with Drug Candidates;** Jason Barricklow; Mary Ellen Banker; *Pfizer, Groton, CT*
- ENERGY: HYDROCARBON AND PETROCHEMICAL; 283 - 306**
- TP 283 **Atmospheric Pressure Field Desorption of Alkanes from Paper;** Xin Li¹; Guangtao Li¹; Zheng Ouyang²; Graham Cooks¹; ¹Department of Chemistry, *Purdue University, West Lafayette, IN*; ²Weldon School of Biomedical Engineering, *Purdue Un, West Lafayette, IN*
- TP 284 **Alaska Heavy Oil Component using Molecular Beam Mass Spectrometry: Temperature Programmed Thermal and Laser Pyrolysis;** Keijing Li; Andrew Renahan; Andrew Herring; Matthew Liberatore; *Colorado School of Mines, Golden, CO*
- TP 285 **Unfolding Molecular Complexity of the Asphaltenes and Heavy Crude Oils by Atmospheric Pressure Laser Ionization (APLI) FT-ICR Mass Spectrometry;** Andras Gaspar; Wolfgang Schrader; *Max-Planck Inst für Kohlenforschung., Mülheim / Ruhr, GERMANY*
- TP 286 **Ion Mobility Mass Spectrometry: A New Dimension for Molecular Structure Characterization of Petroleum Products;** Kathleen Edwards¹; Chunping Wu¹; Kuangnan Qian¹; Manuel Francisco¹; David Russell²; Kyle Fort²; ¹ExxonMobil Research & Engineering Co., *Annandale, NJ*; ²Texas A&M University, *College Station, TX*
- TP 287 **Laser Ablation ICP MS of TLC Plate for Total and Speciation Analyses;** Mauro Martinez Labrador^{1,3}; José Chirinos³; Manuel Caetano³; Carine Arnaudguilhem¹; Brice Bouyssié¹; Ryszard Lobinski^{1,2}; ¹LCABIE - CNRS UMR 5254, *Pau, France*; ²Warsaw University of Technology, *Warsaw, Poland*; ³Universidad Central de Venezuela, *Caracas, Venezuela*
- TP 288 **Applications of Desorption Electrospray Ionization Mass Spectrometry Imaging to Petroleum and Lipid Analysis;** Chunping Wu¹; Kuangnan Qian¹; Livia S. Eberlin²; Gautam Sharma²; R. Graham Cooks²; ¹ExxonMobil Research & Engineering Co., *Annandale, NJ*; ²Purdue University, *West Lafayette, IN*
- TP 289 **Carbon Disulfide Reagent Allows the Characterization of Nonpolar Analytes by Atmospheric Pressure Chemical Ionization (APCI) Mass Spectrometry;** Benjamin Owen¹; Jinshan Gao¹; David Borton¹; Lucas Amundson¹; Enada F Archibold¹; Xiaoli Tan²; Khalid Azyat²; Rik Tykewinski^{2,3}; Murray Gray²; Hilka Kenttämää¹; ¹Purdue University, *West Lafayette, IN*; ²University of Alberta, *Alberta, Canada*; ³Friedrich Alexander University, *Erlangen, Germany*
- TP 290 **Spreading the Electrospray Umbrella: Ionization Reagents that Extend Negative Ion ESI Coverage to Low Polarity Analytes in Complex Organic Mixtures;** Vladislav V. Lobodin¹; Ryan P. Rodgers^{1,2}; Alan G. Marshall^{1,2}; ¹National High Magnetic Field Laboratory, *Tallahassee, FL*; ²Department of Chemistry and Biochemistry, *FSU, Tallahassee, FL*
- TP 291 **Comprehensive Compositional Analysis of NSO-compounds in Diesel Submitted to HDT under Different Operational Conditions by ESI-FT-ICR MS;** Boniek Gontijo Vaz²; Rosana Cardoso Lopes Pereira¹; Sandra Shirley Ximeno Chiaro¹; Rosineide Costa Simas²; Clécio Klitzke²; Heliara Lopes Nascimento²; Yuri E Corilo²; Marcos N Eberlin²; ¹PETROBRAS, *Rio De Janeiro, Brazil*; ²UNICAMP, *Campinas, Brazil*
- TP 292 **Temperature Controlled Separation of Volatile Compounds of Crude Oil by Direct Probe APCI-FTMS;** Matthias Witt; Thomas Arthen-Engeland; Jochen Friedrich; *Bruker Daltonik GmbH, Bremen, Germany*
- TP 293 **Solvent Extraction Combined with Derivatization to Selectively Characterize N-Species in Crude Oil;** Fabiane Nachtigall; Wolfgang Schrader; *Max-Planck Inst für Kohlenforschung., Mülheim / Ruhr, Germany*
- TP 294 **Direct Simultaneous Determination of Fluorinated Benzoic Acids at the Femtomolar Levels in Oil Reservoir Waters by UPLC-MSMS;** Coralie Serres-Piole²; Ryszard Lobinski¹; Navid Moradi-Tehrani²; Christophe Allanic²; Hugues Preud'homme¹; ¹LCABIE - UMR 5254 - CNRS - University of Pau, *Pau, France*; ²TOTAL, *Pau, France*
- TP 295 **Contribution of Mass Spectrometry to Assess Quality of Petroleum Fractions;** Patricia Araujo Pantoja¹; Maria Anita Mendes^{1,2}; Claudio Augusto Oller do Nascimento^{1,2}; ¹University of Sao Paulo, *Sao Paulo, Brazil*; ²CEPEMA-USP, *Sao Paulo, Brazil*
- TP 296 **Application of Normal Phase APCI LCMS for the Analysis of Diesel Fuel and Fuel Dyes;** Richard B. Lucke; Bob W. Wright; *Pacific Northwest National Laboratory, Richland, WA*
- TP 297 **LC/MS/MS Analysis of Three Oil Spill Dispersants in Sea Water;** Robert Ellis¹; Takeo Sakuma¹; Kenichi Suzuki³; Masatoshi Takahashi²; Curtis Campbell²; Chris Borton¹; Deolinda Fernandes¹; Becky Wittrig¹; Stacy Trementin¹; Fouad Khalaf¹; ¹AB SCIEX, *Concord, Canada*; ²Shimadzu Scientific Instruments, *Columbia, MD*; ³GL Sciences Inc, *Tokyo, Japan*
- TP 298 **Silicon Speciation by Gas Chromatography/Mass Spectrometry: Applications in Petroleum Products and Artifacts;** Fabien Chainet¹; Charles-Philippe Lienemann¹; Jeremie Ponthus¹; Marion Courtiade¹; Olivier Francois Xavier Donard²; ¹IFP Energies Nouvelles, *Solaize, France*; ²IPREM, *Pau, France*
- TP 299 **Identification of Silicon Compounds in Gasolines by FT-ICR/MS: Towards the Speciation by Kendrick Plot;** Fabien Chainet¹;

- Jeremie Ponthus¹; Marion Courtiade¹; Charles-Philippe Lienemann¹; Olivier Francois Xavier Donard²; ¹IFP Energies Nouvelles, Solaize, France; ²IPREM, Pau, France
- TP 300 **Analysis of Athabasca Oil Sand Extracts by FT-ICR Mass Spectrometry**; Matthias Witt¹; Niels Goedecke¹; Daniela Bauer²; Matthias Otto²; ¹Bruker Daltonik GmbH, Bremen, Germany; ²Technical University Bergakademie Freiberg, Freiberg, Germany
- TP 301 **Effect of Aerobic Microbial Community Changes in Oil Sands Outcrops on Bitumen Molecular Composition using GCMS and FTICRMS Techniques**; Thomas Oldenburg; Melisa Brown; Man-Ling Wong; Gerrit Voordouw; Steve Larter; *U of Calgary, Calgary, Canada*
- TP 302 **Comparison of Molecular Structures in Coal and Petroleum Asphaltenes by Using Mass Spectrometry**; Matthew Hurt; *Purdue University, West Lafayette, IN*
- TP 303 **Generation of Melamine Polymer Condensates Upon Hypergolic Ignition of Dicyanamide Ionic Liquids**; Konstantin Chinglin¹; Richard Perry¹; Steven Chambreau²; Ghanshyam Vaghjiani²; Richard Zare¹; ¹Stanford University, Stanford, CA; ²Edwards Air Force Base, Edwards, CA
- TP 304 **Molecular Weight Distribution Correction for High Resolution FT-ICR MS Petroleum Data**; Yuri E. Corilo¹; Ryan P. Rodgers^{1,2}; Joshua J. Savory¹; Christopher L. Hendrickson^{1,2}; Alan G. Marshall^{1,2}; ¹National High Magnetic Field Laboratory, Tallahassee, FL; ²Department of Chemistry and Biochemistry, FSU, Tallahassee, FL
- TP 305 **How Much Mass Resolution Is Necessary: Counting the Possible Common Mass Doublets for C_xH_yN_zO_sS_t Elemental Compositions**; Yuan Mao¹; Feng Xian¹; Amy McKenna²; Ryan P. Rodgers^{1,2}; Chris Hendrickson^{1,2}; Alan G. Marshall^{1,2}; ¹Department of Chemistry and Biochemistry, Florida, Tallahassee, FL; ²National High Magnetic Field Laboratory, Tallahassee, FL
- TP 306 **PRECISION: Repeatability and Reproducibility in Crude Oil Analysis by Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry**; Heliara Lopes Nascimento¹; Rosineide C. Simas¹; Rosana C.L. Pereira²; Yuri E. Corilo¹; Boniek G. Vaz²; Clecio F. Klitzke¹; Eduardo M. Schmidt¹; Marcos A. Pudenzi¹; Raissa M.C. F. Silva²; José R. Cerqueira²; Erica T. Moraes²; Wagner L. Bastos²; Eugenio V. Santos²; Marcos N. Eberlin¹; ¹THOMSON UNICAMP, São Paulo, Brazil; ²Petrobras, Rio de Janeiro, Brazil
- Toxicology; 307 - 328**
- TP 307 **Elucidation of a Novel VX Metabolite via UPLC@/MS-MS**; Jeffrey M. Mcquire¹; Matthew Parrish²; E. Michael Jakubowski, Jr.¹; ¹US Army ECBC, Aberdeen Proving Ground, MD; ²SAIC, Gunpowder, MD
- TP 308 **LC-MS-MS Analysis of VX from Tape Stripping Samples following Percutaneous Exposure of Hairless Guinea Pigs**; Christopher Byers¹; Christopher Whalley¹; Edward Clarkson²; Lucille Lumley²; E. Michael Jakubowski, Jr.¹; ¹US Army ECBC, APG, MD; ²U.S. Army Institute of Chemical Defense, APG, MD
- TP 309 **Proteins and Genes Induced by Hepatotoxicity of Cisplatin, an Anticancer Drug**; Young-Eun Cho¹; Thoudam S.K. Singh¹; Hyun-Chul Lee²; Pyong-Gon Moon¹; Jeong-Eun Lee¹; Yu-Ju Chen³; Myung-Hoon Lee^{1,2}; Sang-Hyun Kim¹; Moon-Chang Baek¹; ¹Kyungpook National University, Daegu, Republic of Korea; ²D&P Biotech, Daegu, Republic of Korea; ³Institute of Chemistry, Academia Sinica, Taipei, Taiwan
- TP 310 **Proteomic Study of Escherichia coli treated with Distamycin Analogs Bispyrrole-Pyridine**; Ya-Ting (Tina) Yang¹; Jingyueh Jeng²; Chun-yu Lin¹; Chih Wei Ong¹; ¹National Sun Yat-sen University, Kaohsiung, TAIWAN; ²Chia Nan University of Pharmacy and Science, Tainan, Taiwan
- TP 311 **Simultaneous Quantification of Five DNA Adducts in Human Saliva by Stable Isotope Dilution NanoLC-Nanospray Ionization Tandem Mass Spectrometry**; Wen-Peng Lin; Hauh-Jyun Candy Chen; *National Chung Cheng University, Ming-Hsiung, Chia-Yi, TAIWAN*
- TP 312 **Effects of Benzo(a)Pyrene Diol Epoxide Exposure on DNA Adduct Formation, Altered Gene Expression, and Toxicity in Human Lymphoblastoid TK6 Cells**; Joshua Klaene¹; Caroline Ceailles Flarakos²; James Glick¹; Helmut Zarbl³; Paul Vouros¹; ¹Northeastern University, Boston, MA; ²Unilever, Cumberland, RI; ³Fred Hutchinson Cancer Research Center, Seattle, WA
- TP 313 **Sensitive Detection of 11-nor-Δ⁹-Tetrahydrocannabinol-9-Carboxylic Acid in Hair**; David Engelhart¹; Fred Feverherm²; Stephan Baumann²; ¹Omega Laboratories, Mogadore, OH; ²Agilent Technologies, Inc., Santa Clara, CA
- TP 314 **A Simplified and Streamlined Approach to Solid Phase Extraction for the New SAMHSA Drugs of Abuse Panel**; Michael Rummel; Matt Trass; Seyed Sadjadi; Carl Sanchez; Jeff Layne; Sky Countryman; Ngoc Nguyen; *Phenomenex, Torrance, CA*
- TP 315 **Multiresidue Screening of Common Psychotropic Drugs in Hair Samples by Ultra-High Performance Liquid Chromatography - Tandem Mass Spectrometry**; Valentina Pirro^{1,2}; Federica D'Urso¹; Daniele Di Corcia²; Alberto Salomone²; Marco Vincenti^{1,2}; ¹University of Turin, Torino, ITALY; ²Centro Regionale Antidoping "A. Bertinaria", Orbassano (Turin), Italy
- TP 316 **Validation of SAMHSA Guideline Compliant LC-MS Method for NIDA 5 Panel using Ultra-High Resolution Accurate Mass (UHRAM) Mass Spectrometer**; Xiang He; James F Byrd; Marta Kozak; *ThermoFisher Scientific, San Jose, CA*
- TP 317 **Acetaminophen Toxicity: QUAL/QUAN Liquid Chromatography High Resolution Mass Spectrometric Approaches for Drug Metabolism and Metabolomic Investigations**; David Tonoli; Emmanuel Varesio; Gerard Hopfgartner; *University of Geneva, Geneva, Switzerland*
- TP 318 **Development of an Automated Ion-Trap MSⁿ-Based Screening Method for Clinical and Forensic Toxicology**; Jürgen Kempf¹; Susanne Vogt¹; Anna Sandhaas¹; Wolfgang Weinmann²; Peter Sander³; Birgit Schneider³; Petra Decker³; Sebastian Goetz³; Carsten Baessmann³;

- ¹Institute of Legal Medicine, Univ. Medical Center, Freiburg, Germany; ²Institute of Legal Medicine, University of Bern, Bern, Switzerland; ³Bruker Daltonik GmbH, Bremen, Germany
- TP 319 **Comparison of LC/QTOF with Library Searching to Immunoassay Drug Screens and Confirmatory Methods in Urine;** Ralph Hindle¹; David Kinniburgh²; Lorinda Butlin²; ¹Vogon Laboratory Services Ltd., Calgary, CANADA; ²Alberta Centre for Toxicology, Calgary, AB
- TP 320 **Toxicokinetic Comparison of Melamine, Cyanuric Acid, and their Combinations in F344 rats by UPLC-ESI-MS/MS;** Goncalo Gamboa Da Costa; Cristina C. Jacob; Linda S. VonTungeln; Michelle Vanlandingham; Frederick A. Beland; NCTR, Jefferson, AR
- TP 321 **Analysis of Rat and Human Biological Samples for Diethylene Glycol and its Metabolites by GC/MS and IC/MS;** Adam Perala¹; Mark Filary¹; Kenneth McMartin²; Joshua Schier³; ¹The Dow Chemical Company, Midland, MI; ²Louisiana State University Health Sciences Center, Shreveport, LA; ³Centers for Disease Control and Prevention, Chamblee, GA
- TP 322 **LC/MS/MS Quantitation of Citric Acid Cycle Intermediates in Response to Aristolochic Acid Exposure;** Kimberly A. Conlon; Kathleen G. Dickman; Victor I. Romanov; Charles R. Iden; Stony Brook University, Stony Brook, NY
- TP 323 **Profiling Impaired Hepatic Endoplasmic Reticulum Glycosylation as a Consequence of Ethanol Ingestion;** James Galligan¹; Kristofer Fritz¹; Hannah Tipney¹; Rebecca Smathers¹; James Roede²; Colin Shearn¹; Larry Hunter¹; Dennis Petersen¹; ¹University of Colorado Denver, Aurora, CO; ²Emory University, Atlanta, GA
- TP 324 **Determination of Tetramethylammonium Hydroxide in Urine and Plasma by Liquid Chromatography-Tandem Mass Spectrometry;** Chung-Yu Chen¹; Chia-Ying Lin¹; Cheng-Chieh Yen²; Maw-Rong Lee¹; ¹National Chung-Hsing University, Taichung, Taiwan; ²Chung Shan Medical University, Taichung, Taiwan
- TP 325 **Engineered Nanomaterial Induced Bioeffects in Human Epidermal Keratinocytes;** timothy sanchez; Jun gao; Hsing-lin Wang; jian song; rashi iyer; Srinivas Iyer; Los Alamos Natl Laboratory, Los Alamos, NM
- TP 326 **Determination of over 80 Pharmaceutical and Illicit Drugs in (Post-Mortem) Blood by Ultra-High Performance Liquid Chromatography - Tandem Mass Spectrometry;** Marco Vincenti^{1,2}; Enrico Gerace¹; Valentina Pirro^{1,2}; Daniele Di Corcia¹; Alberto Salomone¹; ¹Centro Regionale Antidoping "A. Bertinaria", Orbassano (Turin), Italy; ²University of Turin, Torino, Italy
- TP 327 **JWH 250 Metabolite Identification Using Advanced High Resolution Accurate Mass Systems;** Hua-Fen Liu¹; Alexandre Wang¹; Weiping Zhao²; Mingshe Zhu²; ¹AB SCIEX, Foster City, CA; ²Bristol Myers Squibb, Princeton, NJ
- TP 328 **Detecting a New Wave of K2/Spice Drugs and their Major Metabolites Using a Hybrid Triple Quadrupole Linear Ion Trap System;** Alexandre Wang; Brent Dawson; Hua-Fen Liu; AB SCIEX, Foster City, CA
- POLYMERS; 329 - 350**
- TP 329 **Mass Spectrometry Characterization of Poly(Ethylene Glycol)s Synthesized by Green Chemistry;** Madalis Casiano; Kwang Su Seo; Judit E. Puskas; Chrys Wesdemiotis; The University of Akron, Akron, OH
- TP 330 **MALDI-TOF detections of Single- and Double-Stranded Polynorbornenes;** Zhen-Yu Xie^{1,2}; Nai-Ti Lin²; Lei Zhu²; Chung-Hsuan Chen^{1,2}; Tien-Yau Luh²; ¹Genomics Research Center, Academia Sinica, Taipei, Taiwan; ²Department of Chemistry, National Taiwan University, Taipei, Taiwan
- TP 331 **MALDI-TOF/TOF Analysis of Poly(3-hydroxyalkanoate) Copolymer Sequence;** Alberto Nuñez; Richard Ashby; Daniel Solaiman; USDA-ARS-ERRC, Wyndmoor, PA
- TP 332 **Meeting the Challenges of Pre-Polymer, Polymer and Polymer Additive Analyses with APPI and ASAP Ionisation Techniques;** Eleanor Riches¹; Michael O'Leary²; Peter Lee²; ¹Waters Corporation, Manchester, UK; ²Waters Corp., Milford, MA
- TP 333 **Thermal Degradation Mass Spectrometry of Complex Polymers and Copolymers using the Atmospheric Solids Analysis Probe (ASAP);** Nadrah Alawani; Gabor Erdodi; Jonathan Rajala; Joseph Kennedy; George Chase; Chrys Wesdemiotis; The University of Akron, Akron, OH
- TP 334 **Application of ASAP Mass Spectrometry Capabilities for Polymeric Materials Characterization;** Andrew J. Hoteling¹; William Nichols²; ¹Bausch + Lomb, Inc., Rochester, NY; ²Eastman Kodak Company, Rochester, NY
- TP 335 **Evaluation of Atmospheric Pressure Solids Analysis Probe (ASAP) MS for the characterisation of synthetic polymers;** Michael Smith; Jackie Mosely; Neil Cameron; Peter Stokes; David Parker; Durham University, Durham, UK
- TP 336 **In situ Analysis of Polymers by MALDI-MS following Calorimetry or Controlled Thermal Aging using Microfabricated Platforms for Heating and MS;** Curtis Mowry; Matthew Moorman; Jeff Reich; Amy Allen; John Anderson; Sandia National Laboratories, Albuquerque, NM
- TP 337 **ESI-MS and MS/MS as Powerful Tools to Scrutinize Microstructures of Plasma-Polymers Deposited by Means of Atmospheric Pressure Dielectric Barrier Discharge;** Thierry Fouquet^{1,2}; Jérôme Bour¹; David Ruch¹; Laurence Charles²; ¹CRP Henri Tudor - AMS Department, Esch-Sur-Alzette, Luxembourg; ²University Aix-Marseille I & III, Marseille Cedex 20, France
- TP 338 **Mass spectrometry of Poly(Ethylene Oxide) Homopolymers Functionalized with a Nitroxide End-group;** Caroline Barrere¹; Valérie Monnier²; Christophe Chendo²; Thomas Trimaille³; Trang Phan³; Didier Gignes³; Stéphane Viel¹; Stéphane Humbel⁴; Laurence Charles¹; ¹Aix-Marseille University, UMR 6264, SACS team, Marseille, France; ²Spectropole, Fédération des Sciences Chimiques-CNR, Marseille, France; ³Aix-Marseille University, UMR 6264, CROPS team, Marseille, France; ⁴Aix-Marseille University, UMR 6263, CTM team, Marseille, France
- TP 339 **A Chemical Pretreatment to Enable MALDI of Synthetic Polymers with Labile End-Group;**

- TP 340 Christophe Chendo¹; Caroline Barrère²; Valérie Monnier¹; Thomas Trimaille³; Trang Phan³; Didier Gimes³; Stéphane Viel²; Stéphane Humbel⁴; Laurence Charles²; ¹Spectropole, *Féd. Sciences Chimiques - CNRS FR1739, Marseille, France*; ²Aix-Marseille Universities - UMR6264 SACS, Marseille, France; ³Aix-Marseille Universities - UMR6264 CROPS, Marseille, France; ⁴Aix-Marseille Universities - UMR6263 CT, Marseille, France
- TP 341 **Preliminary Imination in Structure Determination of Amine Group Containing Polymers by MALDI-ToF Mass Spectrometry**; Roman Borisov; Nikolai Polovkov; Vladimir Zaikin; *Topchiev Institute of Petrochemical Synthesis, Moscow, Russian Federation*
- TP 342 **Confirmation of the Absence of Bisphenol A in Copolyesters by Polymer Hydrolysis in Combination with LC-MS/MS and LC-FLD**; Curtis D. Clevon; Warren Jackson; *Eastman Chemical Company, Kingsport, TN*
- TP 343 **Analysis of Recycled Polyesters using SEC-MALDI and Precipitation Method**; Yuzo Yamazaki; *Shimadzu Corporation, Kyoto, JAPAN*
- TP 344 **Differential Analysis in Polysulfide Silane Coupling Agents by High mass Accuracy MSⁿ and Multivariate Statistical Technique**; Hiroki Nakajima¹; Takahiro Goda¹; Satoshi Yamaki¹; Tsutomu Nishine¹; Yuko Sekine²; Fumito Yatsuyanagi²; ¹Shimadzu Corporation, Kyoto, Japan; ²The Yokohama Rubber CO., LTD., Kanagawa, Japan
- TP 345 **Poly(Methyl Methacrylate) Characterization by High-resolution Ion Mobility Spectrometry-Mass Spectrometry**; Junkan Song¹; Christian Grün²; Ron M.A. Heeren³; Hans-Gerd Janssen^{2,4}; Oscar F. Van Den Brink¹; ¹AkzoNobel RD&I, Deventer, The Netherlands; ²Unilever R&D, Vlaardingen, The Netherlands; ³FOM Inst. Atomic/Molecular Phy, Amsterdam, The Netherlands; ⁴University of Amsterdam, Amsterdam, The Netherlands
- TP 346 **Structural Analysis and Accurate Mass Measurements for Synthetic Polymers and Additives with MALDI/TOF-TOF and High-Energy CID**; Masaaki Ubukata¹; Robert B. Cody¹; John Dane¹; Ayumi Kubo²; Masahiro Hashimoto²; Yoshiyuki Itoh²; Jun Onodera²; ¹JEOL USA, INC., Peabody, MA; ²JEOL Ltd., Tokyo, Japan
- TP 347 **The Analysis of Synthetic Polymer by High Energy CID using High Precursor Ion Selectivity MALDI-TOF-TOF**; Takaya Satoh¹; Ayumi Kubo¹; Yoshiyuki Itoh¹; Masahiro Hashimoto¹; Masaaki Ubukata²; Jun Tamura¹; Takafumi Sato¹; James Doug Meinhardt²; ¹JEOL Ltd., Akishima, JAPAN; ²JEOL USA, Inc, Peabody, MA
- TP 348 **Characterization of Cyclic Polymers by Mass and Tandem Mass Spectrometry**; Aleer M. Yoi¹; Shih-Fan Wang¹; Boyd A. Laurent²; Mark D. Foster¹; Scott M. Grayson²; Roderic P. Quirk¹; Chrys Wesdemiotis¹; ¹The University of Akron, Akron, OH; ²Tulane University, New Orleans, La
- TP 349 **PLUMS - a Software for Analyzing Homopolymer Tandem Mass Spectra**; Kerstin Scheubert¹; Bernhard Pietsch¹; Anja Baumgaertel^{1,2}; Ulrich S. Schubert^{1,2}; Sebastian Böcker¹; ¹Friedrich-Schiller-University, Jena, Germany; ²Dutch Polymer Institute, Eindhoven, Netherlands
- TP 350 **Effect of Experimental Variables on the Attachment of Metal Cation Attachment to Non-Ionic Surfactants. AN ESI Mass Spectrometric Study**; Khaled Edbey¹; Grainne Moran^{1,2}; Gary D. Willett^{1,2}; ¹Benghazi, LIBYA; ²Chifley, NSW, Australia
- FOOD SAFETY; 351 - 375**
- TP 351 **Non-Targeted Screening for Food Residues using High Resolution Accurate Mass LC-MS/MS and Statistical Data Processing**; Andre Schreiber¹; Yun Yun Zou¹; Kai Zhang²; Jon Wong²; ¹AB SCIEX, Concord, CANADA; ²FDA-CFSAN, College Park, MD
- TP 352 **Bisphenolic Can Coating Migrants Interfering with BPA: Accurate Mass/NMR Identification and Levels in Canned Food**; Luke K. Ackerman; Gregory O. Noonan; Timothy H. Begley; *FDA Center for Food Safety, College Park, MD*
- TP 353 **Migration of Perfluoroalkyl Acids from Food Packaging to Food Simulants**; Yichuan Xu; Gregory Noonan; Timothy Begley; Gregory Diachenko; *FDA ORS, College Park, MD*
- TP 354 **Determination of Dioctylsulfosuccinate (DOSS) in Oysters using Single Quadrupole Mass Spectrometry**; Marcus Miller; Jinyuan Wang; William C. Schnute; *Dionex Corporation, Sunnyvale, CA*
- TP 355 **Environmental and food safety screening of persistent organic pollutants (POPs) by GC(xGC)-TOFMS without dependence on extensive sample clean-up**; Nick Bukowski; Kurt Thaxton; Dan Cooper; *ALMSCO International, Llantrisant, UK*
- TP 356 **Analysis of mycotoxins in grain products by QuEChERS combined with liquid chromatography-tandem mass spectrometry**; Pin-Jen Yu; Wan-Yu Hsu; Maw-Rong Lee; *National Chung-Hsing University, Taichung, TAIWAN*
- TP 357 **Determination of PAHs in Edible oil By Automated On-line Clean-up GPC-GCMS System**; Lai Chin Loo¹; Cynthia Melanie Lahey¹; Gee Siang Ling¹; Jie Xing¹; Mylene Tadiran²; Katsuhiro Nakagawa³; ¹Shimadzu Asia Pacific Pte. Ltd., Singapore, SINGAPORE; ²Shimadzu Philippines Corporation, Makati City, Philippines; ³Shimadzu Corporation, Kyoto, Japan
- TP 358 **Determination of five mycotoxins by using QuEChERS method and LC/MS/MS in processed foods**; DongSik Jeong; DaeHyun Kim; JongHo Lee; SeungRim Baek; CheongTae Kim; *NONGSHIM Co., Ltd., Seoul, SOUTH KOREA*
- TP 359 **Simultaneous, rapid analysis of melamine and its analogues in various processed foods by LC-MS/MS**; DaeHyun Kim¹; DongSik Jeong¹; SeungRim Baek¹; JongHo Lee¹; Jongsoo Park²; CheongTae Kim¹; ¹NONGSHIM Co., Ltd., Seoul, SOUTH KOREA; ²Euro Science Co., Ltd., Sunnam City, South Korea
- TP 360 **Simultaneous Determination of Monensin and Salinomycin in Animal Tissue, Milk and Egg by Liquid Chromatography-Tandem Mass**

- Spectrometry**; Kyungna Ma; Jong-Hyuck Lee; Seung-Woon Myung; *KYONGGI UNI., Suwon, SOUTH KOREA*
- TP 361 **Fast and sensitive determination of aflatoxins by MALDI-MS**; Markus Persike; Michael Karas; *Goethe University Frankfurt, Frankfurt/Main, GERMANY*
- TP 362 **The detection of coccidiostats in Food samples by LCMSMS**; Bertram Nieland; Stephen J. Lock; *ABSCIEX, Rotterdam, The Netherlands*
- TP 363 **The detection of Trenbolone and Melengestrol in MEAT samples by LCMSMS**; Stephen J. Lock¹; Frédérique Courant²; Fabrice Monteau²; Prof. Bruno Le Bizet²; Karinne Poupponeau²; Loic Beyet¹; ¹ABSCIEX, Paris, Franc; ²LABERCA, Nantes, France
- TP 364 **Rapid Detection and Quantitation of Chloramphenicol in Honey Samples by Liquid Chromatography-Selected Reation Monitoring**; Anna M. Przyborowska; Roger Tye; John M. Halket; *King's College London, London, UK*
- TP 365 **Atmospheric Pressure Solids Probe (ASAP) analysis of Morpholine on Apples**; Sheher Mohsin; *Agilent Technologies, Schaumburg, IL*
- TP 366 **Evaluation of Elemental Contamination in Nutritional Supplements by EPA Methods 6020A and 6800 Using Inductively Coupled Plasma-Mass Spectrometry**; Gregory M. Zinn¹; Mizanur Rahman¹; H. M. Skip Kingston¹; Scott Faber²; ¹Duquesne University, Pittsburgh, PA; ²The Children's Institute, Pittsburgh, PA
- TP 367 **Analysis of Oysters, Crabs and Shrimp From the Central Florida Coast for Heavy Metal Environmental Contaminants by ICPMS and LC-ICPMS**; Marc E. Engel¹; Douglas H. Adams²; ¹FL Dept of Ag. and Consumer Services (FDACS), Tallahassee, FL; ²FL and Fish Wildlife Conservation Commission (FWC), Melbourne, FL
- TP 368 **Highly sensitive and specific GC-MS/MS method for the analysis of Boron in drinking water and other beverages**; Anthony Macherone; Marcus Kim; *Agilent Technologies, Wilmington, DE*
- TP 369 **Screening and Quantitation of pesticide residues in food using LC-MS/MS and Identification using MS/MS Library Searching**; Yun Yun Zou¹; Andre Schreiber¹; Kai Zhang²; Jon Wang²; ¹AB SCIEX, Concord, CANADA; ²FDA Center for Food Safety and Applied Nutrition, Maryland, MD
- TP 370 **Screening Method for 30 Pesticides in Green Tea Extract Using Automated Online Sample Preparation with LC-MS/MS**; Yang Shi¹; Catherine Lafontaine¹; Fangting Ye²; Zheng Jiang²; Le Ma²; Ting Liu²; Haijian Wang²; Francois A. Espourteille¹; ¹Thermo Fisher Scientific, Franklin, MA; ²Thermo Fisher Scientific China, Shanghai, China
- TP 371 **Analysis of Pesticide Residues in Muscle Tissues with Stir Bar Sorptive Extraction (SBSE) and Tandem Mass Spectrometry**; John E. George; *Bruker, Freemont, CA*
- TP 372 **Quantitative Determination of Ultra-trace N-Methyl Carbamates in Rice Samples by Accelerated Solvent Extraction (ASE) and UHPLC-MS/MS**; Jinyuan Wang; Marcus Miller; William C. Schnute; *Dionex Corporation, Sunnyvale, CA*
- TP 373 **The Analysis of Phoxim Residues using LC/ESI-MS/MS in Cattle and Pig**; Jin-Joo Lee; Mi-Sun Park; Seung-Woon Myung; *Kyonggi University, Suwon, South Korea*
- TP 374 **High-throughput Analysis of Sulfonamide Residues in Milk using an Integrated Multiplexed Micro Flow LC/MS/MS System**; Sylvie Beaudet; Pascal Martin; *AB SCIEX, Concord, Canada*
- TP 375 **Matrix Effects Observed in the Detection of Veterinary Drug Residues in Complex Food Matrices by Q-TOF LC-MS/MS**; Sherri B. Turnipseed; Susan Clark; Joseph Storey; *FDA, Denver Federal Center, Denver, CO*
- INFORMATICS: POST-TRANSLATIONAL MODIFICATIONS; 376 - 384**
- TP 376 **Differential Analysis of Tandem Mass Spectrometry Profile Data from the Perspective of Network Topology**; Han Hu¹; Yu Xia¹; Nancy Leymarie²; Joseph Zaia²; ¹Boston University, Boston, MA; ²Boston University School of Medicine, Boston, MA
- TP 377 **MassA! - a New Tool for Protein Identification and Scan Annotation of Mass-Spectrometric Datasets**; Morten Rasmussen; Peter Hojrup; *University of Southern Denmark, Odense M, DENMARK*
- TP 378 **An Automated Tool for Detecting Modification-Specific Marker Ions to Improve the Sensitivity of Modified Peptide Identification**; Han-Yin Yang¹; Chih-Chiang Tsou¹; Yi-Ju Chen²; Yen-Yi Lin¹; Yu-Ju Chen²; Ting-Yi Sung¹; Wen-Lian Hsu¹; ¹Institute of Information Science, Academia Sinica, Taipei, Taiwan; ²Institute of Chemistry, Academia Sinica, Taipei, Taiwan
- TP 379 **Sequence-tag and de novo Search Strategies for Detection of Whole Saliva Native Peptides and Amino Acid Modifications**; Leeann Higgins¹; Pratik Jagtap²; Matthew Stone¹; Ebbing De Jong¹; Thomas McGowan¹; Tim Griffin¹; ¹University of Minnesota, Minneapolis, MN; ²Minnesota Supercomputing Institute, UMN, Minneapolis, MN
- TP 380 **Towards Fully Identifying a Benchmark Dataset of Tandem Mass Spectra with an Integrated Modification Discovery Pipeline**; Yan Fu; Ding Ye; *Institute of Computing Technology, CAS, Beijing, China*
- TP 381 **An Iterative Search Algorithm for Protein Identification from Complex Patterns of Post-Translational Modifications**; Xin Huang¹; Lin Huang¹; Peng Hong¹; Weihua Xue¹; Miao Liu¹; Kai Fu¹; Zhixin Zhang¹; Shi-Jian Ding^{1,2}; ¹Department of Pathology and Microbiology, UNMC, Omaha, NE; ²Mass Spectrometry Proteomics Core Facility, UNMC, Omaha, NE
- TP 382 **Improved Sequence Tagging Infrastructure for Peptide Modification Hunting in Clinical Cancer Samples**; Surendra Dasari; Dong Wang; Matthew Chambers; David Tabb; *Vanderbilt University, Nashville, TN*
- TP 383 **Systematic Evaluation of Alternative Acquisition of CID and ETD Spectra for Phosphoproteomics**; Min-Sik Kim¹; Jun Zhong¹; Kumaran Kandasamy¹; Bernard Delanghe²; Akhilesh Pandey¹; ¹Johns Hopkins University,

- Baltimore, MD; ²Thermo Fisher Scientific (Bremen) GmbH, Bremen, GERMANY
- TP 384 **The isotopic Distribution: Still a Useful Tool for Tomorrow's MS Instruments?**; Dirk Valkenburg; VITO, Mol, Belgium
- INFORMATICS: SYSTEMS BIOLOGY/PATHWAY ANALYSIS; 385 - 402**
- TP 385 **Identification of Protein Isoforms in Fungi by Mass Spectrometry Analyses Using Alternative Splicing Databases**; Kung-Yen Chang; Emine Gokce; William L. Franck; Ralph A. Dean; David C. Muddiman; North Carolina State University, Raleigh, NC
- TP 386 **Shotgun Protein Sequencing with Meta-Contig Assembly**; Adrian Guthals¹; Karl R. Clauser²; Nuno Bandeira¹; ¹University of California, San Diego, La Jolla, CA; ²Broad Institute of MIT and Harvard, Cambridge, MA
- TP 387 **Quantitative Phosphoproteomic Analysis to Elucidate Signaling Networks of Yeast Filamentous Growth**; Yan Zhang; Hye Kyong Kweon; Christian Shiverly; Anuj Kumar; Philip Andrews; University of Michigan, Ann Arbor, MI
- TP 388 **Clustering by Homology Increases Confidence in Protein Identifications and Quantification in *Populus* Proteomics**; Rachel Adams^{1,2}; Richard J. Giannone¹; Paul Abraham^{1,2}; Gerald Tuskan¹; Chongle Pan¹; Robert Hettich^{1,2}; ¹Oak Ridge National Laboratory, Oak Ridge, TN; ²GST, University of Tennessee, Knoxville, TN
- TP 389 **Identification of Proteins from Biological Samples by MALDI Peptide Mass Fingerprinting without Protein Separation**; Kenneth Parker; Stephen J. Hattan; Jie Du; VIC Instruments Corporation, Sudbury, MA
- TP 390 **De Novo Sequencing of Antimicrobial Peptides from the Leukocytes of the American Alligator (*Alligator mississippiensis*)**; Lancia N.F. Darville¹; Mark E. Merchant²; Kermit K. Murray¹; ¹Louisiana State University, Baton Rouge, LA; ²McNeese State University, Lake Charles, LA
- TP 391 **Proteogenomic Validation of Small and Orphan Polypeptides from Pathogenic *Mycobacteria* using *non-biased* Translation**; Matthew Champion; Erliang Zeng; University of Notre Dame, Notre Dame, IN
- TP 392 **Deciphering the Proteome in Colostrum and Mature Milk**; Anh Le; Doug Barton; Sarah Maria; Robert McMahon; Jeff Sanders; Qiang Zhang; Mead Johnson Nutrition, Evansville, IN
- TP 393 **Label-free MS Determination of Protein Stoichiometry using Bacteriophages as a Model System**; Stephen C. Hardies; Donald Perez; David Parsi; Kevin Hakala; Philip Serwer; Susan T. Weintraub; UT Health Science Center at San Antonio, San Antonio, TX
- TP 394 **Expanding the MDM2 Interactome Using Quantitative Mass Spectrometry Data - A Screen for Linear/Disordered Motifs**; Judith Nicholson¹; Perdita Barran¹; Alexander Scherl²; Ted Hupp¹; ¹University of Edinburgh, Edinburgh, UK; ²Centre Medical Universitaire (CMU), Geneva, Switzerland
- TP 395 **Quantification of Intact Chemical Cross-Links on Proteins Using Isobaric Mass Tags and Tandem Mass Spectrometry**; Hua Xu¹; Pang-Hung Hsu²; ¹Case Western Reserve University, Cleveland, OH; ²National Taiwan Ocean University, Keelung, Taiwan
- TP 396 **A Comparative Label-Free Mass Spectrometric Evaluation of Phosphatidylglycerol's Impact on Protein Expression in Cyanobacteria**; Tatjana Talamantes¹; Mihály Kis²; Ildikó Domonkos²; Zoltán Gombos²; Laszlo Prokai¹; ¹UNT Health Science Center, Fort Worth, TX; ²Institute of Plant Biology, BRC, Szeged, Hungary
- TP 397 **Drug Target Identification from Protein Dynamics Using Quantitative Pathway Analysis**; David Good¹; Roman Zubarev²; ¹Karolinska Institutet, Stockholm, Sweden; ²Karolinska Institute, Stockholm, Sweden
- TP 398 **Salivary Metaproteomics: A Two-Step Workflow for Analyzing Oral Microbiome in a High-Density Human Saliva Dataset and its Clinical Significance**; Pratik Jagtap¹; Thomas McGowan²; Joel Kooren²; Sricharan Bandhakavi³; Sean L. Seymour⁴; Joel Rudney²; Tim Griffin²; ¹Minnesota Supercomputing Institute, UMN, Minneapolis, MN; ²University of Minnesota, Minneapolis, MN; ³Bio-Rad Laboratories, Hercules, CA; ⁴AB SCIEX, Foster City, CA
- TP 399 **From Mass Spectrometry based Proteomics to System Biology**; Martin Damsbo; Alexandre Podtelejnikov; Jacob Kristensen; Erik Nielsen; Christian Ravnsborg Ingrell; Thermo Fisher Scientific, Odense, Denmark
- TP 400 **Mathematical Modeling of Yeast Osmotic Stress Responses from Proteomic and Transcriptional Data Suggests Coordination of Transcription, Translation, and Cell Division**; Shane L. Hubler; M. Violet Lee; Scott Topper; Craig Wenger; Audrey Gasch; Joshua J. Coon; University of Wisconsin, Madison, WI
- TP 401 **Mining of Mass Spectrometry Proteomics Experiments through Integration of Spectral Libraries**; Sarah Killcoyne; Institute for Systems Biology, Seattle, WA
- TP 402 **Applications of Global Distance Metric for Tandem Mass Spectrometry Datasets**; Magnus Palmblad; André M. Deelder; Leiden University Medical Center, Leiden, Netherlands
- IMAGING MS: SOFTWARE; 403 - 411**
- TP 403 **Normalization in MALDI-TOF Imaging of Proteins**; Soeren-Oliver Deininger¹; Claus Koester¹; Shannon Cornett²; Rainer Paape¹; Michael Becker¹; Charles G. Pineau³; Sandra Rauser⁴; Axel Walch⁴; Eryk Wolski¹; ¹Bruker Daltonik GmbH, Bremen, Germany; ²Bruker Daltonics Inc., Billerica, MA; ³Inserm U625, Rennes, France; ⁴Institute of Pathology, Helmholtz Zentrum München, Munich, Germany
- TP 404 **Absolute Quantification of Drugs and Peptides in Brain Tissue Section using MALDI Imaging MS (IMS)**; Patrik Kallback¹; Mohammadreza Shariatgorji¹; Nicoletta Schintu²; Per Svenningsson²; Per E. Andren¹; ¹Uppsala university, Uppsala, Sweden; ²Karolinska Institutet, Stockholm, Sweden
- TP 405 **Development of a Data Processing and Analysis Software for Mass Spectrometry Imaging**; Xingchuang Xiong^{1,2}; Xiang Fang²; You Jiang²; Zejian Huang²; Yukui Zhang¹; Zheng Ouyang³; ¹Beijing Institute of Technology, Beijing,

- China; ²National Institute of Metrology, Beijing, China; ³Purdue University, West Lafayette, IN
- TP 406 **Software for Peak Picking using Common Peak Method for Imaging Mass Spectrometry Data;** Masaru Ushijima¹; Shigeki Kajihara²; Kurando Hosaka³; Takahiro Hayasaka⁴; Naoko Goto-Inoue⁴; Akiko Yuba-Kubo⁵; Masanori Wakui⁵; Ikuko Yao³; Mitsutoshi Setou⁴; Masaaki Matsuura¹; ¹Japanese Foundation for Cancer Research, Tokyo, JAPAN; ²Shimadzu Corporation, Kyoto, Japan; ³Kansai Medical University, Osaka, Japan; ⁴Hamamatsu University School of Medicine, Shizuoka, Japan; ⁵Keio University, Tokyo, Japan
- TP 407 **Exploring MS Imaging Data in a Semi-Supervised and Interactive Manner;** Jocelyne Bruand¹; Theodore Alexandrov²; Maxence Wisztorski³; Céline Meriaux³; Michael Becker⁴; Michel Salzet³; Isabelle Fournier³; Eduardo Macagno¹; Vineet Bafna¹; ¹University of California, San Diego, La Jolla, CA; ²University of Bremen, Bremen, Germany; ³FABMS, Université Lille 1, Villeneuve d'Ascq, France; ⁴Bruker Daltonik GmbH, Bremen, Germany
- TP 408 **Modelling Approach to Optimize Chemical Imaging using a Continuously Moving Proximal Probe in Thermal Desorption/Secondary Ionization Mass Spectrometry;** Vilmos Kertesz¹; Olga Ovchinnikova^{1,2}; Gary J. Van Berkel^{1,2}; ¹Oak Ridge National Laboratory, Oak Ridge, TN; ²University of Tennessee, Knoxville, TN
- TP 409 **Online Public Resource for Imaging Mass Spectrometry Data;** Theodore Alexandrov^{1,2}; Janina Jaeger²; Jeramie Watrous³; Pieter Dorrestein^{3,4}; ¹University of Bremen, Bremen, Germany; ²Steinbeis Innovation Center SCILS, Bremen, Germany; ³University of California at San Diego, La Jolla, CA; ⁴University of California, San Diego, Skaggs school, La Jolla, CA
- TP 410 **Improved Peak Picking for Mass Spectral Imaging by Integrating Localized Wavelet Information;** Nico Verbeeck^{1,3}; Bart De Moor^{1,3}; Etienne Waelkens^{2,3}; Raf Van de Plas⁴; ¹Katholieke Universiteit Leuven, ESAT-SCD, Leuven, Belgium; ²Katholieke Universiteit Leuven, Mol. Cell Biology, Leuven, Belgium; ³Katholieke Universiteit Leuven, ProMeta, Leuven, Belgium; ⁴Vanderbilt University, MS Research Center, Nashville, TN
- TP 411 **Improved Principal Component Analysis for Mass Spectral Imaging by Means of a Maximum Likelihood Estimator;** Yousef El Aalamat^{1,2}; Nico Verbeeck^{1,4}; Bart De Moor^{1,4}; Etienne Waelkens^{3,4}; Raf Van de Plas⁵; ¹Katholieke Universiteit Leuven, ESAT-SCD, Leuven, Belgium; ²Katholieke Universiteit Leuven, IBBT-Future Health, Leuven, Belgium; ³Katholieke Universiteit Leuven, Mol. Cell Biology, Leuven, Belgium; ⁴Katholieke Universiteit Leuven, ProMeta, Leuven, Belgium; ⁵Vanderbilt University, MS Research Center, Nashville, TN
- IMAGING MS: INSTRUMENTATION; 412 - 426**
- TP 412 **Automated MALDI Matrix Spraying System for Coating Multiple Tissue Samples in Imaging Mass Spectrometry Analysis;** William Mounfield; Timothy Garrett; University of Florida, Gainesville, FL
- TP 413 **High-Throughput Imaging Mass Spectrometry: Experiment Definition, Auto-Alignment and Quality Control;** Enrys Jones; Alexandra van Remoortere; René van Zeijl; André Deelder; Liam McDonnell; Parasitology, Leiden University Medical Center, Leiden, the Netherlands
- TP 414 **Comparison and Optimisation of N₂ and Nd:YVO₄ Lasers for MALDI Imaging of Lipids in Models of Murine Atherosclerosis;** Rory Steven; Ed Rainger; Josephine Bunch; University of Birmingham, Birmingham, UK
- TP 415 **Continuous Laser Raster Sampling for High-Speed and High-Spatial Resolution Imaging Mass Spectrometry;** Erik Todd¹; Jeffrey Spraggins¹; Andrey I. Zavalin¹; Richard M. Caprioli²; ¹Vanderbilt University, Nashville, TN; ²Vanderbilt Univ Sch of Med, Nashville, TN
- TP 416 **Transmission Geometry "Point-and-shoot" Profiling and Automatic Sub-Cellular Imaging Mass Spectrometry with 1 µm Spatial Resolution;** Andrey I. Zavalin¹; Richard M. Caprioli²; ¹Vanderbilt University, Nashville, TN; ²Vanderbilt Univ Sch of Med, Nashville, TN
- TP 417 **Development and Evaluation of New Stigmatic Mass Microscope with High Mass and Spatial Resolving Power using Multi-Turn Time-of-Flight Mass Spectrometer;** Jun Aoki^{1,6}; Hisanao Hazama^{2,6}; Michisato Toyoda^{1,6}; Kunio Awazu^{2,6}; Katsuyoshi Masuda^{4,6}; Kenichi Fujii^{5,6}; Yasuhide Naito^{3,6}; ¹Graduate School of Science, Osaka University, Toyonaka, Osaka, Japan; ²Graduate School of Engineering, Osaka University, Suit, Osaka, Japan; ³GPI, Hamamatsu, Shizuoka, Japan; ⁴Suntory Institute for Bioorganic Research, Mishima-gun, Osaka, Japan; ⁵Osaka Institute of Technology, Hirakata, Osaka, Japan; ⁶JST, CREST, Chiyoda-ku, Tokyo, Japan
- TP 418 **Observation of Tissue Sections Using a Stigmatic Mass Microscope with a Multi-turn Time-of-flight Mass Spectrometer;** Hisanao Hazama^{1,7}; Hidetoshi Yoshimura^{1,7}; Jun Aoki^{2,7}; Hirofumi Nagao³; Michisato Toyoda^{2,7}; Katsuyoshi Masuda^{4,7}; Kenichi Fujii^{5,7}; Toshio Tashima⁷; Yasuhide Naito^{6,7}; Kunio Awazu^{1,7}; ¹Graduate School of Engineering, Osaka University, Suita, Osaka, Japan; ²Graduate School of Science, Osaka University, Toyonaka, Osaka, Japan; ³Renovation Center, Osaka University, Totonaka, Osaka, Japan; ⁴Suntory Institute for Bioorganic Research, Mishima-gun, Osaka, Japan; ⁵Osaka Institute of Technology, Hirakata, Osaka, Japan; ⁶GPI, Hamamatsu, Shizuoka, Japan; ⁷Japan Science and Technology Agency, CREST, Chiyoda-ku, Tokyo, Japan
- TP 419 **A UV/IR-MALDI Sample Stage Integrating Scanning Knife-Edge and Slit Devices for Laser Beam Analysis;** Jens Soltwisch; Klaus Dreisewerd; University of Muenster, Muenster, Germany
- TP 420 **Direct Imaging of Sample Surfaces with Digital Imaging Mass Spectrometry;** Casimir Bamberger¹; Andreas Bamberger²; ¹The Scripps Research Institute, La Jolla, CA; ²Albert-Ludwigs University of Freiburg, Freiburg, Germany
- TP 421 **Determination of Kinetic Energy Distributions of Different Materials versus Ion Transfer Efficiency for Spatially Resolved SIMS on Crossbeam Devices;** Michel Aliman¹; Hubert Mantz¹; Alexander Laue²; Albrecht Glasmachers²;

- ¹Carl Zeiss NTS GmbH, Oberkochen, Germany;
²University of Wuppertal, Wuppertal, Germany
- TP 422 **Probing Liquid Surfaces *in situ* under Vacuum Using TOFSIMS**; Li Yang¹; Xiao-Ying Yu¹; James Cowin^{1,2}; Zihua Zhu¹; Martin Iedema¹; ¹Pacific Northwest National Laboratory, Richland, WA;
²Cowin In-Situ Science, L. L. C., Richland, WA
- TP 423 **2D and 3D Imaging of Biological Samples Using a Novel Integrated LAESI-MS Source**; Brent Reschke; Callee Walsh; Pamela Williams; Holly Henderson; Matthew Powell; Protea Biosciences, Inc., Morgantown, WV
- TP 424 **Online Sample Manipulation and Preparation within Liquid Extraction Based Surface Sampling Probes**; Mariam S Elnaggar; Gary J. Van Berkel; Oak Ridge National Laboratory, Oak Ridge, TN
- TP 425 **Direct Analysis of Lipids in Animal and Human Tissue by MALDI Imaging and LMJ Surface Sampling Coupled to Nano-Electrospray MS**; Josephine Bunch; Rian Griffiths; Rebecca Edwards; Helen Cooper; Sumera Karim; Patricia Lalor; University of Birmingham, Birmingham, UK
- TP 426 **Metalloproteome Microscopy for Quantitative Imaging of Metals and Metallomics Studies in Neurosciences**; Johanna Sabine Becker; Forschungszentrum Juelich, Juelich, Germany
- PEPTIDES: PTM IDENTIFICATION I; 427 - 445**
- TP 427 **Characterization of N1 – A Histone Chaperone Involved in Establishing the Embryonic Epigenetic State in *Xenopus laevis***; Joseph Strukl¹; Paromita Mukherjee²; Joshua Nicklay¹; Jeffrey Shabanowitz¹; David Shechter²; Donald Hunt¹; ¹University of Virginia, Charlottesville, VA;
²The Albert Einstein College of Medicine, Bronx, NY
- TP 428 **The Dynamic Epigenome of Induced Pluripotent Stem Cells Controls Cellular Fate**; Michelle Gonzales¹; Rupa Sridharan^{2,3}; Kathrin Plath^{2,3}; Benjamin Garcia¹; ¹Princeton University, Princeton, NJ; ²Broad Stem Cell Center, Univ of California, Los Angeles, CA; ³David Geffen School of Medicine, Univ California, Los Angeles, CA
- TP 429 **Capillary Electrophoresis-Electrospray Ionisation-Mass Spectrometry (CE-ESI-MS) for PTM Analysis of H1 Histones: Strengths and Limitations**; Klaus Faserl; Bettina Sarg; Bernhard Halfinger; Herbert Lindner; Innsbruck Medical University, Innsbruck, AUSTRIA
- TP 430 **Compendium Proteomic-Transcriptomic Analysis of Epigenetic Features in Human Cell Lines**; Eric Chan²; Gary Leroy¹; Barbara Bryant²; Patrick Trojer²; Benjamin Garcia¹; ¹Princeton University, Princeton, NJ; ²Constellation Pharmaceuticals, Inc., Cambridge, MA
- TP 431 **Bottom-Up Proteomic Analysis of PTM changes on Histones through Prostate Cancer Progression**; John Lapek¹; Lisabeth Hoffman²; Gregory Tomblin¹; Alan Friedman¹; ¹University of Rochester, Rochester, NY; ²University of Georgia, Athens, GA
- TP 432 **Comparative Analysis of Histone Post-Translational Modification Patterns Obtained by Mass Spectrometry on Intact Proteins, Asp-N/Glu-C and tryptic peptides**; Kevin Contrepois²; Eric Ezan¹; Carl Mann²; Francois Fenaille¹; ¹CEA, iBiTec-S, SPI, Gif Sur Yvette, France; ²CEA, iBiTec-S, SBIGeM, Gif sur Yvette, France
- TP 433 **Identification and Quantification of Histone PTMs on Nucleosomes Isolated with Bromodomain and Chromodomain Containing Proteins**; Gary Leroy¹; Iouri Chepelev²; Nicolas L. Young¹; Peter A. Dimaggio¹; Keji Zhao²; Benjamin Garcia¹; ¹Princeton University, Princeton, NJ; ²National Institutes of Health (NIH), Bethesda, MD
- TP 434 **Comparison of Age and Calorie-Restricted Yeast Histone PTM Profiles using Isotopic Derivatization and High Resolution Mass Spectrometry**; Elisabeth Hersman¹; Junbiao Dai¹; Jef D. Boeke¹; Robert J. Cotter²; ¹Johns Hopkins Medical Institute, Baltimore, MD; ²Middle Atlantic MS Laboratory, Baltimore, MD
- TP 435 **Identification and Quantification of Lysine Acetylation on Histones From High Glucose Grown Rat Retinal Muller Cells**; Chandra Sekhar Rao Kadiyala; Yunpeng Du; Timothy Kern; Masaru Miyagi; Case western reserve University, Cleveland, OH
- TP 436 **MS/MS of Synthetic Peptides Is Not Sufficient to Verify New Types of Protein Post-Translational Modifications**; Sangkyu Lee; Minjia Tan; Lunzhi Dai; Yue Chen; Yingming Zhao; The University of Chicago, Chicago, IL
- TP 437 **Validation of Peptide and PTM Identifications by Chemical Perturbation Proteomics**; Jakob Bunkenborg; Lasse G. Falkenby; Lea M. Harder; Jens S. Andersen; CEBS, University of Southern Denmark, Odense, Denmark
- TP 438 **Probabilistically Assigning Sites of Protein Modification with Scaffold PTM**; Brian C. Searle; Mark Turner; Proteome Software Inc., Portland, OR
- TP 439 **Generalized Approach for Determination of False Localization Rates in Post-Translational Modification Site Assignments**; June Snedecor¹; Banu Dost¹; Vineet Bafna²; Mark Lortie¹; Claudio Albuquerque¹; Nuno Bandeira¹; ¹University of California, San Diego, La Jolla, CA; ²Univ. Cal. San Diego, San Diego, CA
- TP 440 **Modification Site Localization Scoring Integrated into a Search Engine**; Peter R. Baker; Jonathan C. Trinidad; Katalin F. Medzihradszky; A.L. Burlingame; Robert Chalkley; UCSF, San Francisco, CA
- TP 441 **New Computational Method for Identifying Peptides with Unspecified Modifications**; Lin He¹; Xi Han¹; Lei Xin²; Baozhen Shan²; Bin Ma¹; ¹University of Waterloo, Waterloo, Canada; ²Bioinformatics Solutions Inc., Waterloo, Canada
- TP 442 **Prediction of Collision-Induced Dissociation Spectra of Peptides with Post-Translational or Process-Induced Modifications**; Zhongqi Zhang; Amgen, Inc., Thousand Oaks, CA
- TP 443 **Software and Algorithm for Differential Characterization of Post-Translational Modifications**; Vivek N. Bhatia¹; David H. Perlman²; Catherine E. Costello¹; Mark E. McComb¹; ¹Boston University School of Medicine, Boston, MA; ²Princeton University, Princeton, NJ
- TP 444 **A Comprehensive Analysis of Protein Post-Translational Modifications, Disulfide Bonds, Mutations, and Novel Types of Modifications**;

- Seungjin Na; Eunok Paek; *Univ. of Seoul, Seoul, South Korea*
- TP 445 **High Levels of Iron Adducts Contribute to Unassigned Peaks in Database Searches;** Jonathan Blandford¹; Lindsay Schambeau¹; Cristina Di Poto²; Lewis K. Pannell¹; ¹*Mitchell Cancer Institute, Mobile, AL*; ²*Georgetown University Med Ctr, Washington, DC*
- PEPTIDES: QUANTITATIVE ANALYSIS – LABELED; 446 - 463**
- TP 446 **iTRAQ and Label-Free Quantitative Proteomics of Two Chlamydomonas Strains using LTQ-Orbitrap Velos;** Hongxia Wang; Sophie Alvarez; Leslie M. Hicks; *Donald Danforth Plant Science Center, St. Louis, MO*
- TP 447 **Development and Validation of 8-Plex N,N-Dimethyl Leucines as Novel Tandem Mass Tags for Quantitative Proteomics and Peptidomics;** Tyler J. Greer; Feng Xiang; Dustin Frost; Lingjun Li; *University of Wisconsin-Madison, Madison, WI*
- TP 448 **Measurement of Lysine Acetylation Occupancy Rates using Deuterated Acetylation Labeling Approach;** Yong Chen; Marjan Gucsek; *NIH/NHLBI, Bethesda, MD*
- TP 449 **Utilization of ²H-Labeled Synthetic Peptides or Proteomes in Targeted Quantitative Proteomics;** Bekim Bajrami; Xudong Yao; *University of Connecticut, Storrs, CT*
- TP 450 **Quantitative Top-Down and Bottom-Up Profiling of the Proteomic Response to Ionizing Radiation;** Shawna Hengel; Zhixin Tian; Joshua T. Aldrich; Gordon Slys; Gordon A. Anderson; Nikola Tolic; Matthew Monroe; Anil K. Shukla; Si Wu; Errol Robinson; David L. Stenoi; Ljiljana Pasa-Tolic; *Pacific Northwest National Laboratory, Richland, WA*
- TP 451 **High Precision Quantitative Proteomics for Identifying the Regulation of Proteins in Microglia by miRNAs using Tandem Mass Tags;** Seema Sharma¹; Shantel Gushue²; Debra Parchaliuk²; Julian Saba¹; Mark Sanders¹; Stephanie Booth²; ¹*Thermo Fisher Scientific, San Jose, CA*; ²*NML, Public Health Agency, Winnipeg, Canada*
- TP 452 **Understanding the Role of TRK Receptors in Neuroblastoma using Quantitative Phosphoproteomics Approaches;** Michael Rosenblatt¹; Megan Dobbs¹; Douglas Hughes¹; Ryan Bomgarden¹; Eugene Cichon¹; Garrett Brodeur²; John C. Rogers¹; ¹*Thermo Fisher Scientific, Rockford, IL*; ²*The Children's Hospital of Philadelphia, Philadelphia, PA*
- TP 453 **Mass Spectrometric Analysis of Hematopoietic Stem Cell Regulation;** Andrew Williamson; Anthony Whetton; *Manchester Uni, Manchester, UK*
- TP 454 **Quantitative Peptidomics of Spinal Cord and Striatum from Mice Deficient in Endothelin Converting Enzyme-2;** Xiaowen Hou¹; Lydia Miller²; Lakshmi Devi²; Jonathan Sweedler¹; ¹*University of Illinois Urbana-Champaign, Urbana, IL*; ²*Mount Sinai School of Medicine, New York, NY*
- TP 455 **Quantitative proteomic profiling of tamoxifen response in breast cancer cells via pH dependent RP-RP-HPLC-Chip/Q-TOF analysis;** Michael Gormley¹; Vadiraja Bhat²; Andrew Quong¹; ¹*Thomas Jefferson University, Philadelphia, PA*; ²*Agilent Technologies, Wilmington, DE*
- TP 456 **Quantitative proteomic analysis of healthy dentate and edentulous saliva: Assessing the GCF content of saliva;** Andrew Creese¹; Melissa Grant¹; Marko de Jager²; Helen Cooper¹; Iain Chapple¹; ¹*University of Birmingham, Birmingham, UK*; ²*Philips Oral Healthcare, Snoqualmie*
- TP 457 **Identification of novel cisplatin induced MHC-peptides in ovarian cancer by immunoproteomics;** Vivekananda Shetty¹; Gomathinayagam Sinnathamby¹; Zacharie Nickens¹; Julie Hafner¹; Michael A Morse²; Ramila Philip¹; ¹*Immunotope, Inc., Doylestown, PA*; ²*Department of Medicine, Duke University Med Cent, Durham, NC*
- TP 458 **Quantitative Proteomics of Epigenetically Altered Lines of Brachypodium distachyon Exposed to Brome Mosaic Virus;** David Shearer¹; Vic Spicer¹; Oleg Krokhin¹; Steve Haber²; Kenneth Standing¹; ¹*University of Manitoba, Winnipeg, Canada*; ²*Agriculture Canada, Winnipeg, Canada*
- TP 459 **A combined SILAC/TMT labeling strategy for higher order multiplexed quantitative analysis of the yeast TOR pathway;** Noah E. Dephore; *Harvard Medical School, Boston, MA*
- TP 460 **Tandem Mass Tags for Relative Quantitation using Higher Energy CID on a Dual Pressure Linear Ion Trap;** Julie A. Horner; Roger G. Biringer; Andreas F.R. Huhmer; August A. Specht; Philip M. Remes; Jae C. Schwartz; *Thermo Fisher Scientific, San Jose, CA*
- TP 461 **Stable isotopes in large-scale quantitative proteomics: merits and drawbacks of isobaric tagging and SILAC;** M. Violet Lee¹; Justin Brumbaugh¹; Doug Phanstiel¹; Craig Wenger¹; Edward Huttlin²; Steven Gygi²; Joshua J. Coon¹; ¹*University of Wisconsin, Madison, WI*; ²*Harvard Medical School, Boston, MA*
- TP 462 **Statistical evaluation of iTRAQ quantitative mass spectrometric data provenient from two separation techniques and obtained with two fragmentation methods;** Paolo Soffientini¹; Andrea DiFonzo¹; Theodora Manousidou¹; Gabriela Grigorean²; ¹*Cogentech, Milan, Italy*; ²*Instituto Europeo Oncologico, Milan, Italy*
- TP 463 **OFFGEL Peptide Fractionation without Glycerol;** Na Li; Dodge Baluya; Jhoana Mendoza; Rong Wang; *Mount Sinai School of Medicine, New York, NY*
- PEPTIDES: SEQUENCE ANALYSIS; 464 - 470**
- TP 464 **Identification of the apelin peptides in Bovine colostrum using Liquid chromatography-High resolution mass spectrometry;** Cédric Mesmin; Francois Becher; Francois Fenaille; Eric Ezan; *CEA Saclay/iBiTec-S\SPI, Gif sur Yvette, France*
- TP 465 **Comparative Analysis of De Novo Sequencing Solutions Utilizing High Mass Accuracy Data and Computational Algorithms;** John D. Leszyk; Stephanie Maniatis; Scott A. Shaffer; *University of Massachusetts Medical School, Worcester, MA*
- TP 466 **Improving peptide sequence characterization using electron-capture dissociation and collision-induced dissociation;** Eisuke Hayakawa¹; Gerben Menschaert²; Geert Baggerman¹; Walter Luyten¹; Liliane Schoofs¹;

- ¹Katholieke Universiteit Leuven, Leuven, BELGIUM; ²Ghent University, Ghent, Belgium
- TP 467 **Unexpected cleavages in common enzymatic digests: their specificity, abundance and practical use;** Anna Shevchenko; Andrea Knaust; Marc Gentzel; Andrej Shevchenko; *MPI of Molecular Cell Biology and Genetics, Dresden, GERMANY*
- TP 468 **Differential acid-catalyzed labeling employing ¹⁸O (DALEO) - a tool for peptide de novo sequencing;** Dan Andersson; Diana Klingler; Markus Hardt; *Boston Biomedical Research Institute, Watertown, MA*
- TP 469 **Analysis of a Peptide Library using Photodissociation in de novo Sequencing;** William Running; James P. Reilly; *Indiana University, Bloomington, IN*
- TP 470 **Peptide/Protein Separation with Cationic Polymer Brush Nanosponges for MALDI MS Analysis;** Stephanie Eastwood; Venney Wong; Bojan Mitrovic; Colleen Scott; Gary R. Kinsel; *Southern Illinois University Carbondale, Carbondale, IL*
- H/D EXCHANGE: BIOMOLECULAR STRUCTURAL ANALYSIS; 471 - 505**
- TP 471 **Exploring Structural Dynamics of Small Aβ(1-40) Oligomers by Hydrogen Exchange and Top-Down ECD Mass Spectrometry;** Jingxi Pan¹; Jun Han²; Christoph Borchers²; Lars Konermann¹; ¹University of Western Ontario, London, Canada; ²University of Victoria-Genome BC Proteomics Centre, Victoria, BC
- TP 472 **Structure and Dynamics of the Proline Isomerase Pin1 Studied by Hydrogen Exchange Mass Spectrometry;** Mahasilu Amunugama; Brian Shilton; Lars Konermann; *Univ. of Western Ontario, London, ON*
- TP 473 **Hydrogen Exchange-Mass Spectrometry Reports Interdomain Interactions in Solution Studies of MAP Kinases;** Kevin Sours¹; Thomas Lee¹; Natalie Ahn²; ¹CU-Boulder, Boulder, CO; ²HHMI, Boulder, CO
- TP 474 **Distinct Patterns of Activation-Dependent Changes in Conformational Mobility between ERK1 and ERK2;** Adam Ring; Kevin Sours; Thomas Lee; Natalie Ahn; *Univ. of Colorado, Boulder, CO*
- TP 475 **Epitope Mapping for a ~300 kDa Antigen by Solution-Phase H/D Exchange FT-ICR Mass Spectrometry;** Qian Zhang²; Mark R. Emmett¹; Pallavi Tripathi³; LeAnna N. Willison³; Shridhar K. Sathe⁴; Kenneth H. Roux³; Alan G. Marshall^{1,2}; ¹Ion Cyclotron Resonance Program, NHMFL, Tallahassee, FL; ²Department of Chemistry and Biochemistry, FSU, Tallahassee, FL; ³Department of Biological Science, FSU, Tallahassee, FL; ⁴Dept of Nutrition, Food, and Exercise Science, FSU, Tallahassee, FL
- TP 476 **Architecture of the 14-3-3/RGS3 Complex Studied by HDX and Chemical Cross-Linking;** Petr Man^{1,2}; Lenka Rezabkova^{2,3}; Petr Novak^{1,2}; Petr Herman⁴; Jaroslav Vecer⁴; Vladimir Havlicek¹; Tomas Obsil^{2,3}; ¹Institute of Microbiology, Prague, Czech Republic; ²Faculty of Science, Charles University in Prague, Prague, Czech Republic; ³Institute of Physiology, Prague, Czech Republic; ⁴Institute of Physics, Charles University in Prague, Prague, Czech Republic
- TP 477 **Characterization of Conformational Epitopes of a Therapeutic Antibody by Hydrogen-Deuterium Exchange (HDX) and Top-down Mass Spectrometry;** Bin Wang; *Protein Analytics (pRED), Roche Diagnostics GmbH, Penzberg, Germany*
- TP 478 **Experimental and Theoretical Studies of Gas-Phase H/D Exchange Reactions on Protonated Mitorubrin Azaphilones and Derivatives under ESI Conditions;** Ljubica Svilar^{1,2}; Vesna Stankov-Jovanovic²; Héloïse Soldi-Lose¹; Denis Lesage¹; Sandra Alves¹; Jean-Claude Tabet¹; ¹UPMC, Paris, France; ²Faculty of Science and Mathematics, Nis, Serbia
- TP 479 **Hydrogen/Deuterium Exchange Mass Spectrometry Reveals Quaternary Conformational Changes for AMP Activated Protein Kinase upon Binding of Small Molecules;** Rachelle R Landgraf¹; Michael J Chalmers¹; Francis Rajamohan²; Melissa S Harris²; Rachelle Magyar²; Ravi G Kurumbail²; Patrick R Griffin¹; ¹The Scripps Research Institute, Jupiter, FL; ²Pfizer, Inc., Groton, CT
- TP 480 **Mechanistic Studies of Retinoic Acid Receptor-related Orphan Receptor Modulators by Hydrogen-Deuterium Exchange Mass Spectrometry;** Janelle Lauer; Naresh Kumar; Michael Chalmers; Ruben Garcia-Ordóñez; Patrick R. Griffin; *The Scripps Research Institute, Jupiter, FL*
- TP 481 **Dissecting Estrogen Receptor Modulator Selectivity with Hydrogen / Deuterium Exchange Mass Spectrometry and X-ray Crystallography;** Michael Chalmers²; Yong Wang¹; Scott Novick²; Bruce Pascal²; Sato Masahiko¹; Henry Brant¹; Chahrazad Montrose-Rafizdah¹; Jeffrey Dodge¹; Patrick Griffin²; ¹Lilly Research Laboratories, Indianapolis, IN; ²The Scripps Research Institute, Scripps Florida, Jupiter, FL
- TP 482 **Hydrogen Exchange Mass Spectrometry Analysis of an Inactivating Mutant of Fes SH2-kinase;** Thomas E. Wales¹; Panagis Filippakopoulos²; Stefan Knapp²; John R. Engen¹; ¹Northeastern University, Boston, MA; ²SGC, University of Oxford, Oxford, UK
- TP 483 **Conformational Dynamics Studies of PEGylated and Non-PEGylated Granulocyte Colony Stimulating Factor by Hydrogen/Deuterium Exchange Mass Spectrometry;** Hui Wei¹; Joomi Ahn²; Ying-Qing Yu²; Guodong Chen¹; Adrienne Tymiak¹; ¹Bristol-Myers Squibb, Princeton, NJ; ²Waters Corporation, Milford, MA
- TP 484 **Histidine HDX Mass Spectrometry: Relationship between the HDX Rate Constants and the pKa Values;** Vennela Mullangi^{1,3}; Takashi Nakazawa²; David Ball³; David Anderson³; Masaru Miyagi⁴; ¹Case Western Reserve University, Cleveland, OH; ²Nara Women's University, Nara, Japan; ³Cleveland State University, Cleveland, OH; ⁴Case Western Reserve University, Cleveland, OH
- TP 485 **Utility of Hydrogen/Deuterium Exchange (H/D-Ex) for Epitope Mapping of Large, Highly Modified Antigens in Biotherapeutic Drug Development;** Steven C. Pomerantz¹; Sheng-Jiun (Sam) Wu¹; Jinquan Luo¹; Sook Yen

- E²; Yoshitomo Hamuro²; Jennifer F. Nemeth¹;
¹Centocor Research and Development, Radnor, PA;
²ExSAR Corporation, Monmouth Junction, NJ
- TP 486 **A Study of Apolipoprotein E4 Oligomerization by H/DX and Electron-Transfer Dissociation;** Richard Yu-Cheng Huang; Kanchan Garai; Carl Frieden; Michael L. Gross; Washington University, St. Louis, MO
- TP 487 **Deuterium Exchange – Mass Spectrometry Method for Improved Determination of Proton Exchange Sites in Insulin under Amyloid Fibril Forming Conditions;** Teerapat Rojsajjakul; Fred King; West Virginia University, Morgantown, WV
- TP 488 **Structural Characterization of Coagulation Factor XIII and Activated Forms of FXIII by Hydrogen-Deuterium Exchange Mass Spectrometry;** Mette Dahl Andersen; Johan H. Faber; Novo Nordisk A/S, Maaloev, Denmark
- TP 489 **Gas-phase Hydrogen-Deuterium Exchange Coupled with ECD to Investigate Conformational Dynamics in Peptides and Proteins;** Kevin B. Turner; Aaron Highley; Eizadora Yu; Sidmey Elmer; Yooli Light; Darryl Sasaki; Ken Sale; Joseph Schoeniger; Sandia National Laboratories, Livermore, CA
- TP 490 **HDX-Mass Spectrometry Study of Amyloid beta (A β 1-42) Peptide Oligomer;** Ying Zhang; Washington University in St. Louis, St. Louis, MO
- TP 491 **Solvent Accessibility of the Active Site Loop and the Oligomerization Interface of Peroxiredoxins Studied using Synapt HDMS UPLC HDX Technology;** Sasidhar N Nirudodhi; Claudia Maier; Oregon State University, Corvallis, OR
- TP 492 **A Top-Down Approach to Investigate Protein Structure and Protein-Protein Interactions using H/D Exchange and FT-ICR Mass Spectrometry;** Michaela J. Levy; Pei-Jing Pai; David H. Russell; David P. Barondeau; Texas A&M University, College Station, TX
- TP 493 **A Study on the Conformational Analysis of Big-Size Peptides Using H/D Exchange Combined with ESI and ETD-MS;** Chhabil Dass¹; Raghu K Chitta²; ¹The University of Memphis, Memphis, TN; ²Bayer, Berkeley, CA
- TP 494 **Investigation of the Opening Mechanism of *E. coli* DNA Polymerase Processivity Clamp by Hydrogen Exchange Mass Spectrometry;** Jing Fang; Penny. J Beuning; John R. Engen; Northeastern University, Boston, MA
- TP 495 **Characterizing Disordered Proteins by H/D Exchange Mass Spectrometry (H/D-MS);** Theodore Keppel¹; Farai Rusinga¹; Victoria Dunlap²; Julie Rumi-Masante²; Trevor Creamer²; David Weis¹; ¹University of Kansas, Lawrence, KS; ²University of Kentucky, Lexington, KY
- TP 496 **Major Conformational Change Correlated with Novel Function of Human Lysyl-tRNA Synthetase Revealed by Hydrogen/Deuterium Exchange FT-ICR Mass Spectrometry;** Huimin Zhang¹; Alan G. Marshall^{1,2}; Pengfei Fang³; Paul Schimmel⁴; Xiang-Lei Yang⁴; Min Guo³; ¹Nat'l High Magnetic Field Lab, Tallahassee, FL; ²Florida State University, Tallahassee, FL; ³The Scripps Research Institute Florida, Jupiter, FL; ⁴The Scripps Research Institute, La Jolla, CA
- TP 497 **Conformational Selection in Heat-stable Nucleoid (H-NS)-mediated Gene Silencing in Bacteria by Ion Mobility and Amide H/D Exchange Mass Spectrometry;** Ganesh S. Anand¹; Gao Yunfeng¹; Mark Ritchie²; Yan Jie¹; Linda Kenney³; ¹NUS Singapore, Singapore, Singapore; ²Waters Pacific Pte Ltd, Singapore, Singapore; ³University of Illinois at Chicago, Chicago, IL
- TP 498 **Structural Studies of Signal Transduction in a Transmembrane Protein;** Kathleen Molnar; University of Pennsylvania, Philadelphia, PA
- TP 499 **Kinetic H/D Exchange and ECD Evidence for the α -Helix as a Basic Structural Element of Gaseous Protein Ions;** Sergio Castro¹; Kathrin Breuker²; Owen S. Skinner¹; Xianglei Kong³; Fred W. McLafferty¹; ¹Cornell University, Ithaca, NY; ²University of Innsbruck, Innsbruck, Austria; ³Nankai University, Tianjin, China
- TP 500 **Interaction between BRCT Domains of Ligase IV and XRCC4 Studied by H/D Exchange Coupled to Mass Spectrometry;** Martial Rey; Yu Yaping; Susan Lees-Miller; David Schriemer; University of Calgary, Calgary, Canada
- TP 501 **Investigating Insulin Oligomers by Native Spray H/D Exchange and Top-Down Mass Spectrometry;** Yining Huang; Weidong Cui; Michael L. Gross; Washington University, St. Louis, MO
- TP 502 **Hydrogen Exchange-Mass Spectrometry Enables the Facile Measurement of Stapled Peptide Folding Dynamics and the Optimization of Stapled Peptide Drug Properties;** Xiangguo (Eric) Shi¹; Thomas Wales²; Carl Elkin¹; Noriyuki Kawahata¹; John R. Engen²; Allen Annis¹; ¹Aileron Therapeutics, Inc., Cambridge, MA; ²Northeastern University, Boston, MA
- TP 503 **Quantitative Assessment of Protein Models by Comparison of H/D Exchange MS Data with Exchange Behavior Accurately Predicted by DXCOREX;** Tong Liu¹; Dennis Pantazatos²; Sheng Li¹; Yoshitomo Hamuro³; Vincent Hilser⁴; Virgil Woods Jr.¹; ¹UCSD, La Jolla, CA; ²COBRE Center for Cancer Research and Development, Providence, RI; ³ExSAR Corporation, Monmouth Junction, NJ; ⁴Johns Hopkins University, Baltimore, MD
- TP 504 **Bacterial Mechanism of Iron Uptake and Release by Hydrogen/Deuterium Exchange;** Leslie Silva; University of Calgary, Calgary, Canada
- TP 505 **Probing the Structure and Peptide-Peptide Interaction of Fusogenic Peptide Oligomer using nES MS and H/D Exchange experiments;** John D. Gehman; Richard A. J. O'Hair; Hadi Lioe; University of Melbourne, Parkville, Australia

GLYCOPROTEINS: CHARACTERIZATION; 506 - 528

- TP 506 **Correlating Glycan Expression with Gene Expression in Milk Glycoproteins;** Jincui Huang; Mariana Barboza; Yapa Wickramasinghe; Shuai Wu; Juan Medrano; Carlito Lebrilla; University of California, Davis, CA
- TP 507 **Identification of Surface Glycoprotein markers for CD24⁺ Pancreatic Cancer Cells Using a Lectin Microarray and LC-MS/MS;**

- TP 508 Jianhui Zhu; Jintang He; Yashu Liu; David M. Lubman; *University of Michigan, Ann Arbor, MI*
LC-MS/MS Biopharmaceutical Glycoanalysis: Comparison of Pronase Digestion and 2-AB Labeling; John Schiel; Jennifer Au; Hua-Jun He; Karen Phinney; *NIST, Gaithersburg, MD*
- TP 509 **Mass Spectrometric Approach for Characterization of Kinetics and Site-specificity of a Glycosyltransferase Initiating O-glycosylation of IgA1 Hinge Region**; Kazuo Takahashi¹; Milada Horynova^{1,2}; Milan Raska^{1,2}; Stacy D. Hall¹; Archer D. Smith IV¹; Bruce A. Julian¹; Zina Moldoveanu¹; Jiri Mestecky¹; Matthew B. Renfrow¹; Jan Novak¹; ¹*University of Alabama at Birmingham, Birmingham, AL*; ²*Palacky University in Olomouc, Olomouc, Czech Republic*
- TP 510 **A Relationship between IgY(Δ Fc) and the Endangered White-Wood Winged Ducks High Susceptibility to Mycobacterium Avium**; Tessianna Misko; Phil D'Amico; Sarah Stevens; Jody Modarelli; *Hiram College, Hiram, OH*
- TP 511 **Capillary Electrophoresis Coupled to Advanced QTOF Mass Spectrometer for the Study of Glycopeptides in Monoclonal Antibodies**; Suresh Babu CV¹; Ravindra Gudihal¹; Ning Tang²; Tobias Preckel³; Martin Greiner³; ¹*Agilent Technologies India Pvt. Ltd, Bangalore, INDIA*; ²*Agilent Technologies, Santa Clara, CA*; ³*Agilent Technologies R&D and Mktg. GmbH & Co.KG, Waldbronn, Germany*
- TP 512 **Deglycosylation Study of Murine IgG1, IgG2a, IgG2b and Humanized IgG1 Monoclonal Antibodies**; Megan Ellis; John Lambert; Alex Lazar; *ImmunoGen, Inc., Waltham, MA*
- TP 513 **Improved Mass Spectrometric Analysis of IgG molecule and its Posttranslational modifications**; Sara Marron; Erika Lattova; Helene Perreault; *University of Manitoba, Winnipeg, Canada*
- TP 514 **Glycosylation Characterization of Human IgA1 by UPLC-ESI QTOF MS through Differential Deglycosylation**; Song Klapoetke; Steven Becht; *PPD, Middleton, WI*
- TP 515 **Ion Mobility MS of Glycopeptides from the Fc Regions of Different IgG Subclasses**; Yoshinao Wada¹; Michiko Tajiri¹; Kenji Hirose²; ¹*Osaka MCHRI, Osaka, Japan*; ²*Nihon Waters K.K., Osaka, Japan*
- TP 516 **Developmentally Regulated Posttranslational Modification of Histone H1**; Simon Moon¹; Jose E. Meza²; Carol Ball²; Roger A. Acey¹; ¹*California State University, Long Beach, CA*; ²*Agilent Technologies, Santa Clara, CA*
- TP 517 **The Analysis of Subcellular Fractions from Mycobacterium tuberculosis for the Presence of Glycosylated Proteins**; Geoffrey T Smith¹; Christina Bell²; Michael J Sweredoski¹; Sonja Hess¹; ¹*Caltech, Pasadena, CA*; ²*University of Montreal, Montreal, QC*
- TP 518 **Analyses of Fungal Glycotopes by MSⁿ and MS^E**; Teresa Hong; Diana Diaz Arevalo; Karine Bagramyan; Roger Moore; Gabriel Gugiu; Markus Kalkum; *City of Hope, Duarte, CA*
- TP 519 **Characterization of N-linked Glycosylated Proteins in Complex Tomato Fruit Extracts Coupling HILIC with Precursor Ion Scanning and MS³**; Wei Chen¹; Robert Sherwood¹; James McCordle¹; Eliel May²; Jocelyn Rose²; Theodore Thannhauser³; Sheng Zhang¹; ¹*Proteomics & Mass Spec Facility, Cornell University, Ithaca, NY*; ²*Department of Plant Biology, Cornell University, Ithaca, NY*; ³*USDA-ARS at Cornell University, Ithaca, NY*
- TP 520 **Glycation Sites Determination of the Synthetic Neoglycoconjugate Tetrasaccharide from Bacillus Anthracis Exosporium Conjugated to the BSA using LC-ESI-Qq-TOF-MS/MS and MALDI-TOF/TOF-MS/MS**; Farid Jahouh¹; Shu-jie Hou²; Paul Kovac²; Josph Banoub^{1,3}; ¹*Memorial University of Newfoundland, St John's, Canada*; ²*NIDDK, LBC, National Institutes of Health, Bethesda, MD*; ³*Department of Fisheries and Oceans, St John's, Canada*
- TP 521 **Comparative Glycoproteomics of N-Linked Complex-Type Glycoforms Containing Sialic Acid in Human Serum**; Wonryeon Cho; Kwanyoung Jung; Fred Regnier; *Purdue University, West Lafayette, IN*
- TP 522 **Quantification of Glycoproteins Associated with Esophageal Adenocarcinoma through Lectin Chromatographic Enrichment and LC-MS/MS**; Ehwang Song; Swetha Pyreddy; Yehia Mechref; *Texas Tech University, Lubbock, TX*
- TP 523 **Alteration of Glycoprotein Expression in Breast Ductal Epithelial Cells**; Evelyn H. Kim; Vladimir Galchev; Kathleen M. Woods Ignatoski; David E. Misek; *University of Michigan, Ann Arbor, MI*
- TP 524 **Characterization of Wheat Germ Agglutinin-Enriched Proteins from Non-Human Primate Cerebrospinal Fluid**; Ronald A. Miller; Shahriar Niroomand; Jacob Marcus; Joel B. Schachter; Daniel S. Spellman; Bonnie J. Howell; *Merck and Co., Inc., West Point, PA*
- TP 525 **A Mass Spectrometric Assay for Analysis of Haptoglobin Fucosylation in Pancreatic Cancer**; Zhenxin Lin¹; Diane Simeone¹; Michelle Anderson¹; Randall Brand²; Xiaolei Xie¹; Kerby Shedden¹; Mack Ruffin¹; David Lubman¹; ¹*University of Michigan, Ann Arbor, Ann Arbor, MI*; ²*University of Pittsburgh, Pittsburgh, PA*
- TP 526 **Applications of the IDAWG Technique to Quantitative Glycomics of Human Embryonic Stem Cells**; Meng Fang; Jae-Min Lim; Michael Kulik; Sandi Brimble; Jun Han; Will York; Stephen Dalton; Lance Wells; *Complex Carbohydrate Research Center, Athens, GA*
- TP 527 **Concurrent Global Analysis of the Proteome and N-linked Glycome of Differentiating Human Embryonic Stem Cells**; Shan M. Randall¹; Steven H. Walker¹; Prasenjit Sarkar¹; Balaji Rao¹; Timothy S. Collier²; David C. Muddiman¹; ¹*North Carolina State University, Raleigh, NC*; ²*Washington University, St. Louis, MO*
- TP 528 **Simple Workflow For Glycosylation Pattern Analysis In Human Plasma**; Oliver Ozohanic; Lilla Turiák; László Drahoš; Károly Vékey; *Hungarian Academy of Sciences, Chemical Research C, Budapest, HUNGARY*
- TP 529 **Identification of Novel Phosphorylation Sites of CBP in the beta-catenin Interacting N-terminus**; Mingquan Guo; Zanzian Xia; Hong Ma; *University of Southern California, Alhambra, CA*

- TP 530 **The Dynamic Phosphorylation of Class IIa Histone Deacetylases Is Implicated in both Conserved and Divergent Functions;** Amanda J. Guise; Todd M. Greco; Mark Amirault; Ileana M. Cristea; *Princeton University, Princeton, NJ*
- TP 531 **Comprehensive Phosphoproteome Analysis of INS-1 Pancreatic Beta-Cells by Various Digestion Strategies Coupled with Liquid Chromatography-Tandem Mass Spectrometry;** Dohyun Han^{1,2}; Sungyoon Moon²; Hyunsoo Kim²; Ekwon Kim²; Ho-Pil Min²; Youngsoo Kim^{1,2}; ¹Seoul National University, Seoul, South Korea; ²Seoul National University College of Medicine, Seoul, South Korea
- TP 532 **First Time Identification of Phosphorylation Sites in C. Maxima Phloem Small RNA Binding Protein 1 by Hybrid High-accuracy MS;** Weitao Jia¹; Lijun Liu²; Milady Ninonuevo¹; William J. Lucas²; Julie A. Leary¹; ¹Dept. of Molecular and Cellular Biology, U.C.Davis, Davis, CA; ²Dept. of Plant Biology, U.C.Davis, Davis, CA
- TP 533 **A Proteomic Strategy to Identify Protein Kinase Substrates and Substrate Specificity;** Liang Xue¹; Wenhorng Wang²; Lianghai Hu¹; Anton Iliuk¹; Shuai Yu²; Robert Geahlen²; Andy Tao¹; ¹Department of Biochemistry, Purdue University, West Lafayette, IN; ²Department of Med. Chem. and Mol. Pharm, Purdue, West Lafayette, IN
- TP 534 **Mouse Liver Phosphopeptide Analysis with Comparative Mascot Scoring;** Ling Zhong; Mark J. Raftery; *Bioanalytical Mass Spectrometry, Sydney, Australia*
- TP 535 **Identifying WNK1 Phosphorylation Sites within WNK4 Reveals a Switch Mechanism to Control Sodium Reabsorption and Potassium Secretion;** Orlando Yarborough III¹; Peng Yue²; Wen-Hui Wang²; Richard Lifton¹; Jesse Rinehart¹; ¹Yale University, New Haven, CT; ²New York Medical College, Valhalla, NY
- TP 536 **Highly Sensitive Phosphoproteome Analysis of a Minute Number of Cells;** Takeshi Masuda¹; Yasuyuki Igarashi¹; Masaru Tomita¹; Jun Namiki²; Naoyuki Sugiyama¹; Yasushi Ishihama³; ¹Institute for Advanced Biosciences Keio University, Tsuruoka, Japan; ²Keio University School of Medicine, Tokyo, Japan; ³Kyoto University, Kyoto, Japan
- TP 537 **Investigation of the Impact of Phosphorylation on Top-down Electron Capture Dissociation Mass Spectrometry of Large Proteins;** Xiao Guo; Fangmin Xu; Han Zhang; Huseyin Guner; Ying Ge; *University of Wisconsin-Madison, Madison, WI*
- TP 538 **Comparison of ATP/ADP Probes versus Kinobeads for the Enrichment of Kinases from Complex Lysates;** Simone Lemeer¹; Kristian Kohl¹; John C. Rogers²; Bernhard Kuster¹; ¹Technische Universität München, Freising, Germany; ²Thermo Fisher Scientific, Rockford, IL
- TP 539 **Application of Sheathless CE-ESI-MS for the Identification of Phosphorylation Sites of Caldesmon after Incubation with Myosin Light Chain Kinase;** Bettina Sarg¹; Leopold Kremsner¹; Apolinary Sobieszek²; Bernhard Halfinger¹; Herbert H. Lindner¹; ¹Div. of Clin. Biochemistry, Biocenter Innsbruck, Innsbruck, Austria; ²Institute for Biomedical Aging Research, Innsbruck, Austria
- TP 540 **Identification of Phosphorylation Sites in the Gap Junction Protein Connexin45;** Richard Y-C. Huang; Evelyn M. Kanter; Henry W. Rohrs; Kathryn A. Yamada; R. Reid Townsend; *Washington University, St Louis, MO*
- TP 541 **Site-Specific Kinetic Analysis of Sic1 Phosphorylation with Liquid Chromatography Fourier Transform-Ion Cyclotron Resonance Mass Spectrometry;** Wendi Hale; Hangtian Song; S. Marjan Varedi; Xiaoxia Lin; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*
- TP 542 **Increasing Phosphoproteomic Coverage through Sequential Digestion by Complementary Proteases;** Jason M. Gilmore; Arminja Kettenbach; Scott A. Gerber; *Dartmouth Medical School, Lebanon, NH*
- TP 543 **Identification of ABCA4 Phosphorylation by Mass Spectrometry;** Benlian Wang^{1,3}; Yaroslav Tsybovsky²; Krzysztof Palczewski^{2,3}; Mark Chance¹; ¹Center for Proteomics and Bioinformatics, Cleveland, OH; ²Department of Pharmacology, Cleveland, OH; ³Ophthalmology and Visual Sciences, Cleveland, OH
- TP 544 **Phosphorylation of the Human E3 Ubiquitin-Protein Ligase EDD;** Jennifer R Bethard; Lawton Roberts; Hui Zheng; Scott Eblen; *MUSC, Charleston, SC*
- TP 545 **Identification of Novel Post-translational Modifications on c-Src Using Tandem Mass Spectrometry;** Kunhong (Kevin) Xiao; Teng-Yi (Roy) Huang; Kevin Alexander; Chetan B Patel; Santosh Shanmuga; Howard A Rockman; *Duke University Medical Center, Durham, NC*
- TP 546 **Comprehensive Mapping of Phosphorylation Sites in Origin-Recognition Complex;** Cristian I. Ruse; Sylvain Mittelheiser; Samantha Peacock; Bruce Stillman; *Cold Spring Harbor Laboratory, Cold Spring Harbor, NY*
- TP 547 **Identification of Phosphorylated Substrates of Specific Cyclin-CDK Complexes;** Yinyin Li; Brian Chait; *The Rockefeller University, New York, NY*
- TP 548 **Large-Scale Analyses of Phosphorylation and N-linked Glycosylation Post-translational Modifications in Whole Saliva;** Matthew Stone¹; Sricharan Bandhakavi¹; Xiaobing Chen^{1,2}; Thomas McGowan¹; Bin Cheng²; Tim Griffin¹; ¹University of Minnesota, Minneapolis, MN; ²Sun Yat-Sen University, Guangzhou, PR China
- TP 549 **Spatial and Temporal Proteomics Reveals that aPKC Phosphorylates LIN-5/NuMA to Position the Mitotic Spindle during Asymmetric Division;** Javier Munoz; Matilde Galli; Vincent Portegeijs; Mike Boxem; Sander van den Heuvel; Albert J.R. Heck; *Utrecht University, Utrecht, Netherlands*
- TP 550 **Proteomic Characterization and Functional Analysis of Myosin II Motor Proteins during Tumor Cell Migration;** Giridharan Gokulrangan¹; Venkiah Betapudi²; Thomas Egelhoff²; Mark Chance¹; ¹Center for Proteomics and Bioinformatics, CWRU, Cleveland, OH; ²The Lerner Research Institute, Cleveland Clinic, Cleveland, OH
- TP 551 **Analysis of Receptor Phosphorylation during Development and Activity;** Ry Tweedie-Cullen^{1,2,3}; Sasha Singh^{1,2,3}; Judith Steen^{1,2,3}; ¹Harvard Medical School/CHB, Boston, MA; ²Harvard Medical

- School/CHB, Boston, MA; ³Harvard Medical School/CHB, Boston, MA
- TP 552 **Human Cell-Line Phosphoproteome Mapping using a Dual-Funnel ETD Ion Trap**; Schmit Pierre-Olivier; Bruker Daltonique S.A., Wissembourg, France
- INTACT PROTEINS: PTM DISCOVERY; 553 - 567**
- TP 553 **Subcellular Fractionation for Increased Proteome Coverage in Multi-dimensional Top Down Mass Spectrometry**; Dorothy Ahlf; Adam Catherman; John C. Tran; Nathan R. Bohn; Paul Thomas; Neil L. Kelleher; Northwestern University, Evanston, IL
- TP 554 **Modifications of Proteins in the Ribosome in Acquired Drug Resistance**; Karen Lohnes; Faith Hays; Jaclyn Wolfe; Alexey Petrov; Yan Wang; Jonathan Dinman; Catherine Fenselau; University of Maryland, College Park, MD
- TP 555 **Proteomic Analysis of Intact Apolipoproteins in Human HDL using Immunoaffinity Chromatography and Top-Down High Resolution Mass Spectrometry**; Li Jing¹; Donald Puppione¹; Christopher Ryan¹; Christopher Vanselow²; Kym Faull¹; Julian Whitelegge¹; ¹UCLA, Los Angeles, CA; ²Agilent Technologies, San Diego, CA
- TP 556 **Identification of Combinatorial Histone Post-Translational Modifications from Mouse ES Cells to iPS Cells**; Kai Zhang; Nankai University, Department of Chemistry, Tianjin, China
- TP 557 **Integration of Intact Protein and Peptide Measurements for the Characterization of the Extracellular Proteins of Clostridium Thermocellum**; Priyanka Mishra^{1,2}; Robert Hettich²; ¹University of Tennessee, Knoxville, TN; ²Oak Ridge National Laboratory, Oak Ridge, TN
- TP 558 **Top-down and Bottom-up MS Evidence for Sulfur Trafficking by the Pseudomonas aeruginosa PA1006 Protein**; Gregory Tomblin; Johanna Schwingel; John Lapek; Michael Maguire; Nadine VanAlst; Alan Friedman; Barbara Iglewski; University of Rochester Medical Center, Rochester, NY
- TP 559 **Interrogating the Molecular Details of p53 Redox-Regulation Using Top-Down FT-ICR Mass Spectrometry**; Jenna Scotcher¹; David J Clarke¹; Stefan Weidt¹; Ted Hupp²; Peter J Sadler³; C. Logan Mackay¹; Pat Langridge-Smith¹; ¹SIRCAMS, School of Chemistry, Edinburgh University, Edinburgh, EH9 3JJ, UK; ²Cancer Research Centre, Edinburgh University, Edinburgh EH4 2XR, UK; ³Department of Chemistry, University of Warwick, Coventry CV4 7AL, UK
- TP 560 **Identification and Characterization of Intact Proteins in Complex Mixtures using Online ETD Fragmentation on a High Resolution Mass Spectrometer**; Shannon Eliuk¹; John F. Kellie²; Neil L. Kelleher²; Vlad Zabrouskov¹; ¹Thermo Fisher Scientific, San Jose, CA; ²Northwestern University, Evanston, IL
- TP 561 **Mapping the Binding Sites of Platinum Anticancer Drugs to Calmodulin**; Huilin Li; Tzu-yung Lin; Ana Pizarro; Peter Sadler; Peter O'Connor; University of Warwick, Coventry, UK
- TP 562 **Analysis of Histone Post-Translational Modifications Specific to Rett Syndrome by FT-ICR Mass Spectrometry**; Muhammed Karim¹; John Connolly²; Pat Langridge-Smith¹; Adrian P. Bird²; C. Logan Mackay¹; ¹SIRCAMS School of Chemistry, Edinburgh University, Edinburgh, UK; ²Wellcome Trust Centre for Cell Biology, Edinburgh, UK
- TP 563 **Quantitative Proteomic Analysis of S-Nitrosylated Proteins in Microglial BV-2 Cells Under Nitrosative/Oxidative Stress: Antioxidant Effects of the Green Tea (-)-epigallocatechin-3-gallate**; Zezong Gu¹; Fanjun Meng^{1,3}; Wenwen Sheng^{1,2}; Justin Purdy¹; Fan Wei³; Siqi Liu³; Grace Y. Sun^{1,2}; ¹University of Missouri School of Medicine Pathology, Columbia, MO; ²University of Missouri School of Medicine Biochem, Columbia, MO; ³Beijing Institute of Genomics, Chinese Acad. Sci., Beijing, China
- TP 564 **Absolute Quantification and Identification of Intact Proteoforms: Separated by HILIC and Detected by Native UV-Induced Fluorescence and Top-Down Mass Spectrometry**; Daniel T. Lador; Jason D. Russell; Brian L. Frey; Mark A. Scaif; Joshua J. Coon; Lloyd M. Smith; University of Wisconsin-Madison, Madison, WI
- TP 565 **A Novel Approach for Quantifying Allergenic Lipid Transfer Proteins, in Maize Kernels by LC-UV/MS**; Scott Young¹; Krishnamoorthy Kuppannan¹; Barry Schafer²; Dave Albers¹; Demetrius Dielman¹; ¹The Dow Chemical Company, Midland, MI; ²Dow AgroSciences, Indianapolis, IN
- TP 566 **Analysis of Signaling Pathways Modulated by PTEN Phosphatase using Combined DIGE-MS and MudPIT**; Todd W. Miller; Siprachanh Chanthaphaychith; Carlos L. Arteaga; Sarah Stuart; Salisha Hill; Kristie L. Rose; W. Hayes McDonald; David B. Friedman; Vanderbilt University School of Medicine, Nashville, TN
- TP 567 **Constructing a Comprehensive Catalogue of Human Salivary Gland-Derived Intact Proteome using Top-down MS**; Si Wu¹; Joseph Brown¹; Haizhen Zhang²; Nikola Tollic¹; Rui Zhao¹; Da Meng¹; Ron Moore¹; Richard D. Smith¹; Susan Fisher³; Ljiljana Pasa-Tolic¹; ¹PNNL, Richland, WA; ²FHCRC, Seattle, WA; ³University of California San Francisco, San Francisco, WA
- PROTEINS: MEMBRANE; 568 - 587**
- TP 568 **A Dimethyl Isotopic Labeling Strategy Enables in vivo Quantitative Comparisons of Diverse Red Blood Cell Membrane Proteomes**; Matthew Berberich; Yelena Maksimova; Patrick Gallagher; Jesse Rinehart; Yale University, New Haven, CT
- TP 569 **Quantification of Membrane Protein Antigens using Liquid Chromatography Tandem Mass Spectrometry to Support Vaccine Bioprocess Optimization**; John T. Mehl; Merck, West Point, PA
- TP 570 **High-Throughput Pipeline for the Purification and Identification of Desulfovibrio vulgaris (Hildenborough) Membrane Protein Complexes**; Simon Allen¹; Peter J. Walian²; Lucy Zeng²; Haichuan Liu¹; Evelin D. Szakal¹; Steven C. Hall¹; Susan J. Fisher¹; Ralph Santos²; Bonita Lam²; Jil T. Geller²; John-Marc Chandonia²; Terry C. Hazen²; Bing K. Jap²; Mark D. Biggin²; H. Ewa Witkowska¹; ¹University of California, San Francisco, San Francisco, CA; ²Lawrence Berkeley National Laboratory, Berkeley, CA

- TP 571 **Quantitative Analysis of S-Fatty Acylation of Membrane Proteins by Mass Spectrometry and Fluorescence Imaging**; Hongying Zhong; *Central China Normal University, Wuhan, China*
- TP 572 **Structure and Dynamics of Membrane Proteins using HDX: How to Cope with Detergents**; Shahid Mehmood¹; Martial Rey²; Benjamin Clemençon²; Ludovic Pelosi²; Jean-Michel Jault¹; Petr Man³; Eric Forest¹; ¹*Inst. for Structural Biology, Grenoble, France*; ²*CEA, Grenoble, France*; ³*Institute of Microbiology, Prague, Czech Republic*
- TP 573 **Comparison of Cationic Nanoparticle Pellicles for Exploring Plasma Membrane Proteome**; Waeowalee Choksawangkar; *University of Maryland, College Park, College Park, MD*
- TP 574 **Development of an Efficient Strategy for Purification of Plasma Membrane Proteins**; Hsiang-Ju Chen; *Academia Sinica, Taipei, Taiwan*
- TP 575 **Chemical Crosslinking of a Membrane Fraction Yields Integral Membrane Protein/Cytoskeleton Interactions**; Zhen Wang; Kevin L. Schey; *Vanderbilt University, Nashville, TN*
- TP 576 **Detergent Assisted Lectin Affinity Chromatography for Membrane Glycoproteomics**; Dustin Frost; Xin Wei; Lingjun Li; *University of Wisconsin-Madison, Madison, WI*
- TP 577 **Cyanobacterial Membrane-specific Proteome Analysis by Combining Complete Membrane Purification with 1-D SDS/PAGE and Nano-LC/MS**; Kun Cho¹; Hyun Ju Park¹; Sang Oh Kwon²; Seoung Il Kim²; Jong-Soon Choi²; Young Hwan Kim¹; ¹*Division of Mass Spectrometry, KBSI, Ochang, SOUTH KOREA*; ²*Division of Life Science, KBSI, Daejeon, SOUTH KOREA*
- TP 578 **Multienzymatic Strategy for Increased Sequence Coverage of Membrane Proteins using Optimized nLC-MALDI-MS/MS**; Dominic Bäumlisberger; Marion Rohmer; Tabiwang N. Arrey; Benjamin F. Mueller; Tobias Beckhaus; Michael Karas; *Goethe University, Frankfurt Am Main, Germany*
- TP 579 **Quantitative Analysis of Seizure-Induced Rat Brain Proteins using Antibody-Dependant and Independent Approaches**; Je-Hyun Baek¹; James Trimmer²; ¹*NPB (UCD), Davis, CA*; ²*NPB/PMB (UCD), Davis, CA*
- TP 580 **The Neutrophil Derived Oxidant HOCl Selectively Oxidizes Functionally Important Proteins of the Red Blood Cell Membrane**; Grady Blacken¹; Thomas Jordan¹; Yi Wang¹; Xiaoyun Fu^{1,2}; ¹*Research Division, Puget Sound Blood Center, Seattle, WA*; ²*Department of Medicine, University of Washington, Seattle, WA*
- TP 581 **Isolation and Mass Spectrometric Analysis of Native Protein Complexes in Rat Liver Mitochondrial Contact Sites**; Kwangwon Lee; Janos Kerner; Charles Hoppel; *Case Western Reserve University, Cleveland, OH*
- TP 582 **Cardiac Protein-Protein Interaction Networks of Long QT Syndrome Membrane Proteins**; Alicia Lundby; Jesper Velgaard Olsen; *Center for Protein Research, Copenhagen, Denmark*
- TP 583 **Two Dimensional Liquid Chromatography Followed by MALDI-ToF Mass Spectrometry of Intact Membrane Proteins for Differential Proteomic Analysis**; Brian Matthew; James Jorgenson; *University of North Carolina, Chapel Hill, NC*
- TP 584 **Characterizing Human Respiratory Cilia Using Data-Independent LC/MS^E: Identification and Quantification of Membrane Proteins**; Kevin Blackburn¹; Kristin Thompson²; Lawrence Ostrowski²; Michael Goshe¹; ¹*North Carolina State University, Raleigh, NC*; ²*University of North Carolina, Chapel Hill, NC*
- TP 585 **Using Mass Spectrometry to Update Regulated Influenza Vaccine Production**; Carrie Pierce; Tracie Williams; James Pirkle; John R. Barr; *Centers for Disease Control and Prevention, Atlanta, GA*
- TP 586 **Quantitative proteomics analysis for DHA-enhanced proliferation of neural stem cells**; Bill Huang; Masanori Katakura; Hee-Yong Kim; *NIAAA/NIH, Rockville, MD*
- TP 587 **Quantitative Proteomic Analysis of Mouse Brain Membrane Proteins upon Lipopolysaccharide Treatment**; Fa-Yun Che; Cong Zhang; Jihyeon Lim; Edward Nieves; Louis Weiss; Ruth H Angeletti; Harris Goldstein; *Albert Einstein College of Medicine, Bronx, NY*
- PROTEOMICS: TISSUE; 588 - 616**
- TP 588 **Protein Glycosylation Profiling in Pancreatic Cancer Tissue using Lectin Affinity Enrichment and nano-UPLC-LC-MS/MS**; Evelyn H. Kim; Vladimir I. Galchev; David E. Misek; *Department of Surgery, University of Michigan, Ann Arbor, MI*
- TP 589 **Impact of Tissue Stabilization Technology on in vivo Shotgun Phosphoproteome Analysis**; Hiroyuki Katayama¹; Lynn Chellarajan²; Tyler Teceno¹; Laurette Burgess²; John Lindsay³; Keith Wilcoxon¹; Yoshiya Oda¹; ¹*Eisai Inc., Biomarkers and Personalized Medicine, Andover, MA*; ²*Eisai Inc., Life Sciences, Andover, MA*; ³*Denator AB, Westford, MA*
- TP 590 **Oxidative Stress Related Post Translational Modifications in Postmortem Brain Tissue of Individuals Diagnosed with HIV and HIV-Encephalitis**; Lerna Uzasci; Avindra Nath; Robert J. Cotter; *Johns Hopkins University School of Medicine, Baltimore, MD*
- TP 591 **Systematic Evaluation of Protein Identifications for Species with Unsequenced Genomes**; Joel Chick; Steven Gygi; *Harvard medical school, Boston, MA*
- TP 592 **Mass Spectrometry based Approach to Measure and Quantify Protein Degradation and Protease Activity in Tissue Samples**; Christoph Stingl¹; Frederike G.I. van Vilsteren²; Mats Borén³; Katarina Alenas³; Jacques J. Bergman²; Theo M. Luider¹; ¹*Erasmus Medical Center, Rotterdam, Netherlands*; ²*Academic Medical Center, Amsterdam, The Netherlands*; ³*Denator AB, Gothenburg, Sweden*
- TP 593 **Development of a Microwave-assisted Shotgun Analysis Protocol for Proteome Profiling of Formalin-fixed, Paraffin-embedded (FFPE) Tissues**; Nan Wang; Liang Li; *Department of Chemistry, University of Alberta, Edmonton, Canada*
- TP 594 **Characterization of Early and Late Stage Ovarian Carcinomas Using Formalin Fixed Paraffin Embedded Tissue**; Katherine Heaton¹;

- Stephen Master²; ¹Phoenix S&T, Chester, PA; ²University of Pennsylvania, Philadelphia, PA
- TP 595 **Multiple Reaction Monitoring Assay for Pre-eclampsia Related Calcylin Peptides in Formalin-Fixed Paraffin-Embedded Placenta;** Coskun Güzel¹; Nicolette Ursem¹; Lennard Dekker¹; Pieter Derkx¹; Jos Joore²; Evert van Dijk²; Gerard Ligtoet²; Eric Steegers¹; Theo Luider¹; ¹Erasmus Medical Center, Rotterdam, Netherlands; ²Pepscan Presto BV, Lelystad, Netherlands
- TP 596 **Proteomic Investigation on the Response of Prostate Cancer to Oxidative Stress Induced by Photodynamic Therapy;** Dan Dan Xu¹; William Chi-Shing Cho²; Hon-Ming Lam¹; Albert Wing Nang Leung¹; ¹The Chinese University of Hong Kong, Shatin, Hong Kong; ²Queen Elizabeth Hospital, Kowloon, Hong Kong
- TP 597 **Fragmentation Patterns of Immunoglobulin (Ig) Light Chain (LC) Proteins Deposited in Human Subcutaneous Fat Tissues;** Yanyan Lu; Brian H. Spencer; Roger Theberge; Pamela T. Soo Hoo; Lawreen H. Connors; Catherine E. Costello; *Boston University School of Medicine, Boston, MA*
- TP 598 **Disparate Reactivity of the Mitochondrial Thiol Proteome from Heart;** Jing Wang; Claudia Maier; *Oregon State University, Corvallis, OR*
- TP 599 **Use of iTRAQ Labeling Reagents for Relative Quantitation of MACS2A vs. MACS2B in Human Mitochondrial Extracts by Tandem LC-MS;** Alexander Barnakov; William J. Jones; Ingrid Deckman; Andy Mahan; John A. Masucci; *Johnson & Johnson Pharmaceutical, Spring House, PA*
- TP 600 **Preliminary Results on the Characterization of Host-Microbiome Proteome of Ear Infection;** Linda Nagore¹; Lance Price¹; Cindy Liu²; Rick Friedman³; Anil Lalwani⁴; Konstantinos Petritis¹; ¹Translational Genomics Research Institute, Phoenix, AZ; ²Northern Arizona University, Flagstaff, AZ; ³House Ear Institute, Los Angeles, CA; ⁴New York University School of Medicine, New York, NY
- TP 601 **Mass spectrometric Characterization of the HIV-1 Preintegration Complex;** Pawel Ciborowski¹; Cameron Schweitzer²; Teena Jagadish¹; Rufina Dominic Savio¹; Mike Belshan²; ¹University of Nebraska Medical Center, Omaha, NE; ²Creighton University, Omaha, NE
- TP 602 **Identification of CrkL-SH3 Binding Proteins from Embryonic Murine Brain: Implications for Reelin Signaling during Brain Development;** Mujeeburahiman Cheerathodi; Bryan Ballif; *University of Vermont, Burlington, VT*
- TP 603 **Altered Protein Trafficking Quantified in the Synapse of Schizophrenic Post-Mortem Brain using LC-SRM/MS and a Labeled Mouse Brain Standard;** Eugene F. Ciccimaro¹; Matthew L Macdonald²; Scott Peterman¹; Amol Prakash¹; Ian A. Blair²; Chang-Gyu Hahn²; ¹ThermoFisher Scientific, Somerset, NJ; ²University of Pennsylvania, Philadelphia, PA
- TP 604 **Analysis of Membrane and Hydrophilic Proteins Simultaneously Derived from the Mouse Brain Using Cloud-Point Extraction;** Magnus Wetterhall; Ganna Shevchenko; Konstantin Artemenko; Marcus Sjödin; Jonas Bergquist; *Uppsala University, Uppsala, Sweden*
- TP 605 **Nodes and Pathways in PPAR gamma Cognitive Rescue in the Tg2576 Mouse Model of Alzheimer's Disease;** Sigmund Haidacher¹; Rovshan Sadygov¹; Jonathan Starkey¹; Yingxin Zhao¹; Bruce Luxon¹; Jennifer Rodriguez-Rivera¹; Kelly Dineley¹; Vadiraja Bhat²; Nalini Sadagopan³; Larry Denner¹; ¹UTMB, Galveston, TX; ²Agilent Technologies, Wilmington, DE; ³Agilent Technologies, Houston, TX
- TP 606 **Proteomic Analysis of Adriamycin-treated Mice Using Isotopic Labeling to Assess Effects on Immunity;** Adam Evans¹; Teresa Noel²; Daret St. Clair²; D. Allan Butterfield²; Rena A. S. Robinson¹; ¹University of Pittsburgh, Pittsburgh, PA; ²University of Kentucky, Lexington, KY
- TP 607 **Sensitive Protein Knockdown Measurements of ACLY, GPAT and Apo B in Mouse Liver by SRM;** Ekaterina G. Devanova¹; James Loderstedt¹; Heather Zhou¹; Myung Shin¹; Alain vanGool²; Thomas Vogt¹; Brian Hubbard¹; Nathan Yates¹; Ronald Hendrickson¹; ¹Merck & Co Inc., Rahway, NJ; ²MSD, Singapore, Singapore
- TP 608 **Identification of Primary Targets for Protein Nitration in Cortical Mitochondria through Chemoprecipitation and Liquid Chromatography-Tandem Mass Spectrometry;** Jia Guo; Katalin Prokai-Tatrai; Laszlo Prokai; *University of North Texas Health Science Center, Fort Worth, TX*
- TP 609 **Response of the Mitochondrial Proteome of Rat Renal Proximal Convoluted Tubules to Chronic Metabolic Acidosis;** Dana M. Freund; Scott J. Walmsley; Norman P. Curthoys; Jessica E. Prenni; *Colorado State University, Fort Collins, CO*
- TP 610 **In-depth Proteome Characterization of Healthy and Cancerous Chicken Ovarian Tissues;** Angelito I. Nepomuceno; James N. Petite; David C. Muddiman; Adam M. Hawkridge; *North Carolina State University, Raleigh, NC*
- TP 611 **A Proteomic Study of Bacterial Symbionts in Lignocellulose Degradation in the Shipworm *Bankia setacea*;** Colleen O'Neill¹; Elizabeth Lamkin¹; Jennifer Fung²; Jack S. Benner¹; Daniel Distel²; ¹New England Biolabs, Ipswich, MA; ²Ocean Genome Legacy, Ipswich, MA
- TP 612 **A Meta-analysis of Quantitative Proteomics Data from Honeybees Reveals Secrets behind a Better Learning Performance;** Florian Wolschin^{1,2}; Christina Tølfsen^{1,3}; Gro Amdam^{1,2}; ¹UMB, Aas, Norway; ²Arizona State University, Tempe, AZ; ³Climate and Pollution Agency, Oslo, Norway
- TP 613 **Proteomics of Olfaction: Identification and Relative Quantification of Odorant Binding Proteins in the Antennae of *Drosophila melanogaster*;** Taufika Islam Williams; Shilpa Swarup; Shanshan Zhou; Robert Anholt; *North Carolina State University, Raleigh, NC*
- TP 614 **Quantitative Proteomics and Phosphoproteomics Approach to Investigate the Effects of Botanicals on Insulin Sensitivity;** Peter Scherp¹; Lauren Kelley²; William T. Cefalu¹; Indu Kheterpal¹; ¹Pennington Biomedical Research Center, LSU System, Baton Rouge, LA; ²Louisiana College, Pineville, LA
- TP 615 **Cross-referencing a Mass Spectrometry-Derived Quantitative Proteome Signature for**

- Invasive Ductal Breast Carcinoma with Tissue Image Analysis and Clinical Investigations;** Claudia Roewer¹; Cornelia Koy¹; Bjoern Ziemis²; Anngret Radtke³; Oliver Schmitt⁴; Toralf Reimer⁵; Hans-Juergen Thiesen²; Bernd Gerber⁵; Michael O. Glocker¹; ¹Proteome Center Rostock, Rostock, Germany; ²Institute of Immunology, Rostock, Germany; ³Partnerschaft der Fachaerzte fuer Pathologie, Rostock, Germany; ⁴Department of Anatomy, University of Rostock, Rostock, Germany; ⁵Department of Obstetrics and Gynecology, Rostock, Germany
- TP 616 **Label Free Quantitative Proteomics of Formalin Fixed Embedded (FFPE) Tissue Sections from Temporal Giant Cell Arteritis Patients;** Helen Ge¹; Guey Shuang Wu²; Roger Moore¹; Narsing Rao²; Terry Lee¹; Gabriel Gugiu¹; ¹City of Hope, Duarte, CA; ²Doheny Eye Institute, Los Angeles, CA
- PROTEOMICS: APPLICATIONS I; 617 - 641**
- TP 617 **Proteome Characterization of Enterohemorrhagic *Escherichia coli* O157:H7 using High Resolution Mass Spectrometry;** Raghothama Chaerkady^{1,2}; Anne-Marie Hansen³; Nandini Sahasrabudde^{1,2}; Santosh Renuse^{1,2}; Vadiraja B. Bhat⁴; James B. Kaper³; Akhilesh Pandey¹; ¹Johns Hopkins University, Baltimore, MD; ²Institute of Bioinformatics, Bangalore, India; ³University of Maryland, Baltimore, MD; ⁴Agilent Technologies, Wilmington, DE
- TP 618 **Analysis of Proteome Response of Mycobacterium Smegmatis and Mycobacterium Tuberculosis in an Integrated Stress Environment;** Prahlad Rao; UIC, Chicago, IL
- TP 619 **Identifying the Effects of L-telluromethionine on the Proteome of *Escherichia coli* by Nano-ESI/qTOF/MS;** Sarah Brinkley; Tennessee Tech, Cookeville, TN
- TP 620 **Quantitative Tracking of Isotope Flows in Proteomes of Microbial Communities;** Chongle Pan¹; Curt Fischer²; Doug Hyatt¹; Benjamin Bowen³; Robert Hettich¹; Jillian Banfield²; ¹Oak Ridge National Lab, Oak Ridge, TN; ²University of California, Berkeley, Berkeley, CA; ³Lawrence Berkeley National Laboratory, Berkeley, CA
- TP 621 **Comparison of Direct and Indirect Extraction Methods for Deep Metaproteomics Characterization of the Gut Microbiota;** Kristen Corrier¹; Alison Erickson¹; Regina Lamendella³; Brandi Cantarel²; Manesh Shah¹; Claire Fraser-Liggett²; Robert Hettich¹; Janet Jansson³; Marcelo Sztein²; Nathan VerBerkmoes¹; ¹Oak Ridge National Laboratory, Oak Ridge, TN; ²University of Maryland School of Medicine, Baltimore, MD; ³Lawrence Berkeley National Laboratory, Berkeley, CA
- TP 622 **Proteogenomic Analysis and Genome Annotation of *Mycobacterium smegmatis* using High Resolution Mass Spectrometry;** Jagadeesha Maharudraiah¹; Ken Miller^{2,3}; Santosh Renuse^{1,4}; Raju Ravikumar⁵; Raghothama Chaerkady^{1,4}; Vadiraja B. Bhat^{2,3}; H. C. Harsha¹; Akhilesh Pandey⁴; ¹Institute of Bioinformatics, Bangalore, India; ²Agilent Technologies, Santa Clara, CA; ³Agilent Technologies, Wilmington, DE; ⁴Johns Hopkins University, Baltimore, MD; ⁵NIMHANS, Bangalore, India
- TP 623 **Quantitation of Membrane Proteome Dynamics under Diauxic Growth Conditions in *Escherichia coli* Using ¹⁵N-Metabolic Labeling and Unique Tri-Phasic Protein Fractionation;** Grzegorz Sabat; Gregory A. Barrett-Wilt; Heather L. Burch; Michael R. Sussman; University of Wisconsin, Madison, WI
- TP 624 **Large scale Identification of Co-regulated Mitotic Proteins;** Dominic Winter; Sasha Singh; Marc Kirchner; Hanno Steen; Judith Jebanathirajah Steen; Harvard Medical School/Children's Hospital Boston, Boston, MA
- TP 625 **Towards Proteomic Approach for the Identification of Heart Kinetically Stable Proteins;** Qishan Lin; Jinghua Zhu; University at Albany, Rensselaer, NY
- TP 626 **Measurement of Cellular Post-Translational Modification Perturbation in Response to HIV Infection using Copper (I)-catalyzed Cycloaddition Protein Labeling;** David Colquhoun^{1,2}; Veronica Aquino²; Alexey Lyashkov²; Ceereena Mohien²; Rhoel Dinglasan¹; Brian Agnew³; David Graham²; ¹Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; ²Johns Hopkins School of Medicine, Baltimore, MD; ³Life Technologies-Molecular Probes, Eugene, OR
- TP 627 **Proteins in Paintings: Investigation on their Chemical Modifications Due to Local Environment and Aging;** Sophie Dallongeville; Caroline Tokarski; Christian Rolando; Univ. de Lille 1, Sciences et Technologies, Villeneuve D'ascq, France
- TP 628 **Qualitative and Semi-Quantitative Proteomic Characterization of Three Types of Basement Membranes in the Human Eye;** Guy Uechi; Yuchen Lu; Emanuel Schreiber; John Cardamone; Willi Halfter; Manimalha Balasubramani; University of Pittsburgh, Pittsburgh, PA
- TP 629 **Terminal Proteomics for Biomarker Exploration of Plasma Proteome;** Taro Kishimoto^{1,3}; Jun Kondo²; Takako Takai-Igarashi³; Hiroshi Tanaka³; ¹Moleculence Corporation, Kanagawa, Japan; ²Mitsubishi Pharma Corporation, Kanagawa, Japan; ³Tokyo Medical and Dental University, Tokyo, Japan
- TP 630 **Studying Infection Kinetics of Swine-Origin H1N1 (SOIV) Influenza in Cynomolgus Macaques using Mass Spectrometry-based Proteomics;** Arti Navare¹; Eric Y. Chan¹; David Purdy¹; Alexei L. Krasnoslesky¹; Jose Meza³; Friederike Feldmann²; Heinz Feldmann²; Michael Katze¹; ¹University of Washington, Seattle, WA; ²National Institutes of Health, Hamilton, MT; ³Agilent Technologies, Santa Clara, CA
- TP 631 **Studying the Proteome Turnover at a Large-Scale Using Stable-Isotope Labeled Mice;** Antonius Koller²; Jenne Relucio¹; Sara Nik¹; Banu Dost³; Holly Colognato¹; Nuno Bandeira³; Emily Chen¹; ¹Stony Brook University, Stony Brook, NY; ²Stony Brook University, Proteomics Center, Stony Brook, NY; ³University of California, San Diego, La Jolla, CA
- TP 632 **Proteomics Analysis of Dynamic Changes in a CHO Cell Culture;** Tyler D Carlage¹; Li Zang¹; Rashmi Kshirsagar¹; Vijay Janakiraman¹; Andy Weiskopf¹; William Hancock²; ¹Biogen Idec, Cambridge, MA; ²Northeastern University, Boston, MA

- TP 633 **Mass Spectrometry Analysis of Ancient Bone from *Columbian Mammoth***; Ryan Hill; Monika Dzieciatkowska; Kirk Hansen; *Univ. of CO. Denver, AMC, Aurora, CO*
- TP 634 **Isolation of Rat Neuronal Nuclei using Expression Microdissection for Mass Spectrometry-based Proteomic Analysis**; Bing Gao; Kimberly Tran; Michael Tangrea; Carolyn Ott; Nicole Morgan; Anthony Makusky; Robert Bonner; Thomas Pohida; Aubri Gillespie; Eugenia Romantseva; Michael Emmert-Buck; Jennifer Lippincott-Schwartz; Sanford Markey; *National Institutes of Health, Bethesda, MD*
- TP 635 **Identification of Potential Targets of miR200b Using SILAC-based Proteomic Approach**; Arivusudar Marimuthu¹; Keith Waddell²; Santosh Renuse^{1,3}; Praveen Kumar¹; Nandini Sahasrabudde^{1,3}; Lakshmi Dhevi Selvan¹; H.C. Harsha¹; Akhilesh Pandey³; ¹*Institute of Bioinformatics, Bangalore, India*; ²*Agilent Technologies, Santa Clara, CA*; ³*Johns Hopkins University School of Medicine, Baltimore, MD*
- TP 636 **Proteomic Profiling of Urinary Samples Focalized on IEF Gels in the Screening of EPO in Anti-doping Laboratories**; Paule Emilie Groleau; Philippe Desharnais; *INRS-Doping control, Laval, Canada*
- TP 637 **Metabolic Labeling Proteomics of Nascently Synthesized Proteins: Proteomic Response of Mouse Macrophages to Stimulation by LPS and Interferon**; Roger Ebanks¹; Andrew Leslie¹; Kirsten Kukula²; Michael Morash¹; Michelle Euloth¹; ¹*NRC - Institute for Marine Biosciences, Halifax, Canada*; ²*Dalhousie University, Halifax, Canada*
- TP 638 **Zebrafish Proteogenomics**; Raghothama Chaerkady^{1,2}; Elayne Provost¹; Babylakshmi Muthusamy²; Dhanashree Kelkar²; Derese Getnet¹; Nandini A Sahasrabudde^{1,2}; Jun Zhong¹; Praveen Kumar²; Chieh-Huei Wang¹; Vadiraja B Bhat³; Min-Sik Kim¹; Santosh Renuse^{1,2}; Steven Leach¹; Akhilesh Pandey¹; ¹*Johns Hopkins University, Baltimore, MD*; ²*Institute of Bioinformatics, Bangalore, India*; ³*Agilent Technologies, Wilmington, DE*
- TP 639 **From Climate Change to Crops: Redox-Proteomics of Ozone-Induced Responses in Soybean**; Leslie M. Hicks¹; Ashley Galant²; Elizabeth Ainsworth³; Joseph M. Jez²; ¹*Danforth Center, St. Louis, MO*; ²*Washington University, St. Louis, MO*; ³*USDA ARS Photosynthesis Research Unit - UIUC, Urbana-Champaign, IL*
- TP 640 **Proteomics of Small Proteins from Plant Tissues**; Greg Hurst; Patricia Lankford; Xiaohan Yang; Ting Li; David Weston; Sara Allen; Timothy Tschaplinski; Gerald Tuskan; *Oak Ridge National Laboratory, Oak Ridge, TN*
- TP 641 **Analysis of the Cancer Secretome by N-Glyco FASP**; Paul J. Boersema; Tamar Geiger; Dorota F. Zielinska; Jacek R. Wiśniewski; Matthias Mann; *Max Planck Institute for Biochemistry, Martinsried, Germany*
- BIOMARKERS: DISCOVERY I; 642 - 667**
- TP 642 **Quantitative Analysis of Differentially Expressed Saliva Proteins in HIV-1 Seropositive Individuals**; Nawei Zhang¹; Daniel Malamud³; Linqi Zhang²; Haiteng Deng^{1,2}; ¹*The Rockefeller University, New York, NY*; ²*Tsinghua University, Beijing, China*; ³*New York University, New York, NY*
- TP 643 **Investigating the Oxidative Stress Mechanism of Death for Macrophages Exposed to Anthrax Lethal Toxin using DMPO and Mass Spectrometry**; Allison N Schorzman¹; Jeffrey F. Kuhn²; Kenneth B. Tomer¹; ¹*NIEHS, Research Triangle Park, NC*; ²*NIEHS/SRA, Garner, NC*
- TP 644 **Comprehensive Label-Free Quantitative Proteomic Analysis of the *Corynebacterium Pseudotuberculosis* Exoproteome and the Implications on Pathogenicity and Resistance to Stress**; Susan E. Slade¹; Luis Pacheco²; Christopher Dowson¹; Martin Feelisch¹; James Scrivens¹; Vasco Azevedo²; ¹*University of Warwick, Coventry, UK*; ²*Universidade Federal de Minas Gerais, Belo Horizonte, Brazil*
- TP 645 **A Pattern Plus Identity Based Proteomic Approach for Molecular Epidemiology in Infectious and other Endemic Disease**; Rushdy Ahmad¹; D. R. Mani¹; Michael Gillette¹; Margaret Pyle¹; Frode Berven²; Ravali Adusumilli³; Steven A. Carr¹; ¹*Broad Institute of Harvard and MIT, Cambridge, MA*; ²*University of Bergen, Bergen, Norway*; ³*Dana-Farber Cancer Institute, Boston, MA*
- TP 646 **Using SESI-MS to Determine Volatile Biomarkers Released from *Pseudomonas aeruginosa* under Antibiotic Stress**; Yin-Ming Kuo; Jane Hill; *University of Vermont, Burlington, VT*
- TP 647 **Mass Spectrometry-Based Analysis of Mice Infected with *Aspergillus fumigatus***; Chengsi Huang¹; Jason McCarthy²; Marta Feldmesser²; Vicki H. Wysocki¹; ¹*University of Arizona, Tucson, AZ*; ²*Albert Einstein College of Medicine, Bronx, NY*
- TP 648 **MS-based Screening for *Klebsiella* Proteins in Urine Samples of *Klebsiella pneumoniae* Patients**; Zhenlian Ke; Francisco J. Dieguez-Acuna; Nathan G. Hatcher; Daniel S. Spellman; Ronald C. Hendrickson; Bonnie J. Howell; *Merck & Co., West Point, PA*
- TP 649 **Quality Control on MALDI-TOF RPC18 Profiles of Urinary Peptides from Renal Cell Carcinoma Patients**; Erica Gianazza²; Yuri E.M. Van Der Burgt¹; Marco R. Bladergroen¹; Hans Dalebout¹; Italo Zoppis²; Clizia Chinello²; Valeria Squeo²; Gianpaolo Zanetti³; Giancarlo Mauri²; Massimiliano Borsani²; Stefano Signorini²; Marzia Galli Kienle²; Fulvio Magni²; André M. Deelder¹; ¹*Leiden University Medical Center, Leiden, Netherlands*; ²*University of Milano-Bicocca, Monza/Milano, Italy*; ³*University of Milano Ospedale Maggiore Policlinico, Milano, Italy*
- TP 650 **Relative Quantification of Proteins in Urinary Exosomes from Patients with Polycystic Kidney Disease**; Kenneth L. Johnson; Roman M. Zenka; M. Cristine Charlesworth; Benjamin J. Madden; H. Robert Bergen, III; Peter C. Harris; Christopher J. Ward; Marie C. Hogan; *Mayo Clinic, Rochester, MN*
- TP 651 **High-resolution Liquid Chromatography-Mass Spectrometry to Identify Urinary Biomarkers of Autism**; Zachary Fine; Troy Wood; *University at Buffalo, Buffalo, NY*

- TP 652 **Proteomic Analysis of Lipid Rafts of Abca1-/- Macrophages Reveals Novel Signaling in Lipid Rafts**; Saiful M. Chowdhury¹; Xuewei Zhu²; Jason Williams¹; B. Alex Merrick¹; Leesa J. Deterding¹; John S. Parks²; Kenneth B. Tomer¹; Michael B. Fessler¹; ¹NIEHS, NIH, RTP, NC; ²Wake Forest University School of Medicine, Winston-Salem, NC
- TP 653 **Peptide and PTM Biomarkers of Cardiovascular Disease in a Mouse Model**; Mark E. McComb; Vivek N. Bhatia; Deborah A. Siwik; Nancy M. Leymarie; David H. Perlman; Richard A. Cohen; Wilson Colucci; Catherine E. Costello; Boston University School of Medicine, Boston, MA
- TP 654 **Radiation-induced Changes to Endothelial Cell Surface Proteins in the Pursuit of Targets for Vascular Therapies**; Margaret Simonian; Macquarie University/ School of Advanced Medicine, Sydney, Australia
- TP 655 **Biomarker Discovery in Duchenne Muscular Dystrophy Using Parallel Nanotechnology Based Affinity Capture Enrichment**; Sree Rayavarapu¹; Brian Feild³; Ben Lepene⁴; William Coley¹; Yetrib Hathout²; Eric Hoffman¹; Faith Hays³; Kanneboyina Nagaraju¹; ¹The George Washington University, Washington, DC; ²Children's National Medical Center, Washington, DC; ³Shimadzu Scientific Instruments, Columbia, MD; ⁴Ceres Nanosciences, Inc., Manassas, VA
- TP 656 **Metabolomics Analysis of Alcohol on Mice Fed with Unsaturated Fat Diet Using LTQ-FTMS and GCxGC-MS**; Xue Shi; Xiaoli Wei; Wenlong Sun; Xinmin Yin; Xiang Zhang; University of Louisville, Louisville, KY
- TP 657 **Metabolomics Analysis Reveals that Fats Transport Back to Liver from Adipose Tissue in Mice Fed with Alcohol**; Wenlong Sun; Xiaoli Wei; Xue Shi; Bogdan Bogdanov; Xiang Zhang; University of Louisville, Louisville, KY
- TP 658 **MetSign: An Analysis Platform for High Resolution Mass Spectrometry based Metabolomics**; Xiaoli Wei; Wenlong Sun; Xiang Zhang; University of Louisville, Louisville, KY
- TP 659 **Identifying Citrullinated Peptides by Unbiased Full-Proteome Analysis**; A. Jimmy Ytterberg; Dorothea Rutishauser; Elena Ossipova; Anca Catrina; Per-Johan Jakobsson; Lars Klareskog; Roman Zubarev; Karolinska Institute, Stockholm, SWEDEN
- TP 660 **Juvenile Idiopathic Arthritis Patients at Risk of Disease Extension Segregated by Synovial Proteome Analysis**; David Gibson¹; Keri Newell²; Gwen Manning³; Stephen Pennington³; Mark Duncan²; Madeleine Rooney¹; ¹Queen's University Belfast, Arthritis Research, Belfast, UK; ²University of Colorado Denver, Proteome Resource, Aurora, CO; ³University College Dublin, Conway Institute, Dublin, Ireland
- TP 661 **Label Free Comparative Secretome Proteomics of an Amyotrophic Lateral Sclerosis Cellular Model using Human ESC-derived astrocytes**; Robert Sturm; Robert Krenck; Su-chun Zhang; Lingjun Li; University of Wisconsin-Madison, Madison, WI
- TP 662 **Hydrophobic Metabolites Associated with Type II Diabetes in Human Plasma**; Jared Bowden; Edward Dratz; Montana State University, Bozeman, MT
- TP 663 **Use of Novel "Omic" Based Platforms to Enhance Understanding of Pathophysiology in Diabetes**; Tracey Friss¹; Min Du¹; Rangaprasad Sarangarajan²; Vivek K. Vishnudas²; Shen Luan¹; Niven R. Narain²; ¹Berg Diagnostics, Boston, MA; ²Berg Biosystems, Boston, MA
- TP 664 **Novel Insight into the Underlying Pathophysiology of Diabetic-induced Cardiovascular Dysfunction Using the Berg Interrogative Biology™ Discovery Platform**; Min Du¹; Tracey Friss¹; Rangaprasad Sarangarajan²; Vivek K. Vishnudas²; Shen Luan¹; Niven R. Narain²; ¹Berg Diagnostics, Boston, MA; ²Berg Biosystems, Boston, MA
- TP 665 **Type-2 Diabetes and Innate Immunity: Connections Revealed by Multi-Dimensional Fractionation of Blood Plasma**; Scott Laffoon¹; Duane Mooney¹; Edward Dratz^{1,2}; Paul Grieco^{1,2}; ¹Montana State University, Bozeman, MT; ²Zdye LLC, Bozeman, MT
- TP 666 **Label-free Quantification of the Platelet Membrane Proteome in Alzheimer's Disease**; Laura Donovan^{2,3}; Eric Dammer^{2,3}; Allan Levey^{2,3}; James Lah^{2,3}; Nicholas Seyfried^{1,3}; ¹Department of Biochemistry, Atlanta, GA; ²Department of Neurology, Atlanta, GA; ³Emory School of Medicine, Atlanta, GA
- TP 667 **Discovery and Validation of a Potential Serum Biomarker for Presymptomatic Alzheimer's disease**; Linda IJsselstijn; Lennard J. Dekker; Christoph Stingl; Marcel M. van der Weiden; Albert Hofman; Johan M. Kros; Peter J. Koudstaal; Peter A.E. Sillevs Smitt; Monique M.B. Breteler; Theo M. Luider; Erasmus University Medical Center, Rotterdam, Netherlands
- BIOMARKER: QUANTITATIVE ANALYSIS; 668 - 694**
- TP 668 **Enabling Absolute Quantification to Take Flight: An Exploration of Winged Peptides and their Digestion Properties**; Susan E. Abbatiello¹; Naomi Choodnovskiy¹; Michael Burgess¹; Tyra J. Cross²; Derek Smith²; Leigh Anderson³; Steven A. Carr¹; ¹Broad Institute of Harvard and MIT, Cambridge, MA; ²UVic-Genome BC Proteomics, Victoria, BC; ³Plasma Proteome Institute, Washington, DC
- TP 669 **Targeted Biomarker Screen for Secreted Breast Tumor Proteins from a Xenograft Model of Primary Human Breast Cancer**; Nicholas Bateman¹; Michael Lewis²; Christine Wu¹; ¹University of Pittsburgh School of Medicine, Pittsburgh, PA; ²Baylor College of Medicine, Houston, TX
- TP 670 **Determination of Protein Turnover in Infants Diagnosed with Respiratory Distress Syndrome using SIL Tracers and SRM Mass Spectrometry**; Michael Bereman¹; Daniela Tomazela¹; Hillary Heins²; Bruce Patterson²; Aaron Hamvas²; F. Sessions Cole²; Michael J. MacCoss¹; ¹University of Washington, Seattle, WA; ²Washington University, St. Louis, MO
- TP 671 **Multiple Reaction Monitoring for Absolute Quantitation of Low Abundant Protein in Whole Cell Lysate**; Junseok Kim; Functional Proteomics Center, KIST, Seoul, SOUTH KOREA
- TP 672 **Dynamic MRM Measurements of Multi-biomarker Proteins by Triple-Quadrupole Mass Spectrometry with Nanoflow HPLC-Microfluidics Chip**; Eun Sun Ji¹; Mi Hee Cheon¹;

- TP 673 Ju Yeon Lee¹; Jong Shin Yoo¹; Hyun-Jin Jung²; Jin Young Kim¹; ¹Korea Basic Science Institute, Chungbuk, South Korea; ²Agilent technologies Korea Ltd., Gyeonggi, South Korea
Enhanced Detection of Low Abundance Human Plasma Proteins using Tandem IgY14-SuperMix Immunoaffinity Depletion and LC-SRM-MS; Mahmud Hossain; Athena A. Schepmoes; Thomas L. Fillmore; Tao Liu; Errol W. Robinson; Ronald J. Moore; Keqi Tang; David G. Camp II; Richard D. Smith; Wei-Jun Qian; Pacific Northwest National Laboratory, Richland, WA
- TP 674 **Biomarker Pattern Discovery Related to Alzheimer's Disease using Quantitative Proteomics**; Lei Wang; Keith Wilcoxon; Ken Aoshima; Hiroyuki Katayama; Yoshiya Oda; Eisai Inc, Andover, MA
- TP 675 **Evaluation of CSF beta-2-microglobulin, VGF, and Cystatin-C as Diagnostic Biomarkers of Alzheimer's Disease using SRM Assay**; Loïc Dayon¹; Darragh P. O'Brien¹; Emma L. Schofield¹; James Campbell¹; Sanna-Kaisa Herukka²; Merja Hallikainen²; Simon Lovestone³; Hilka Soininen²; Malcolm A. Ward¹; ¹Proteome Sciences plc, London, UK; ²Kuopio University and University Hospital, Kuopio, Finland; ³MRC Centre for Neurodegeneration Research, London, UK
- TP 676 **MRM Analyses for Quantitation of Biomarkers in Urine Exosomes**; Kevin L. Schey; Kristie Rose; Junhua Wei; J. Matthew Luther; Xiaojing Wang; Bing Zhang; David L. Hachey; Vanderbilt University, Nashville, TN
- TP 677 **Precursor and Product Ion Number Effects on LC-MS/MS Quantification Variability**; Eric Kilpatrick¹; Karen Phinney²; Lisa Kilpatrick¹; ¹National Institute of Standards and Technology, Gaithersburg, MD; ²NIST, Gaithersburg, MD
- TP 678 **Simultaneous Quantitation of Apolipoprotein(a) Concentration and Total Kringle KIV2 Repeat in Plasma by UPLC/MS/MS**; Theresa McLaughlin; Michael Lassman; Haihong Zhou; Lauretta LeVoci; Timothy Fisher; Thomas Roddy; Merck & Co., Inc., Rahway, NJ
- TP 679 **Targeted Analysis of Protein Expression in Human Lymphoblast Cell Lines**; Adele Blackler; Ruby Fried; Pablo Moya; Dennis L. Murphy; NIMH, Bethesda, MD
- TP 680 **Targeted Protein Quantitation Using High Resolution, Accurate Mass Precursor Ion Scanning with scheduled MS/MS**; Reiko Kiyonami¹; Amol Prakash²; Vlad Zabrouskov¹; ¹ThermoFisher Scientific, San Jose, CA; ²Thermo Fisher Scientific BRIMS center, Cambridge, MA
- TP 681 **Absolute Quantification of Therapeutic Antibodies in Biofluids by Nano Liquid Chromatography and Triple Quadrupole Linear Ion Trap MS technology**; Jenny Albanese; Christie L. Hunter; AB SCIEX, Foster City, CA
- TP 682 **Optimization of Nanospray Voltage and Spray Stability: Impact on Chromatographic Peak Area for Analyte Quantitation**; Amanda Berg¹; Mike S. Lee²; Gary Valaskovic¹; ¹New Objective, Inc., Woburn, MA; ²Milestone Development Services, Newtown, PA
- TP 683 **Verification of a QSOX1 Peptide as Cancer Biomarkers Using Selected Reaction Monitoring**; Jian Liu¹; Kwasi Antwi²; Tony Tegeler¹; Linda Nagore¹; Ashoka D. Polpitiya¹; Ben Katchman²; Rafaella Zappardo³; Michael Demeure¹; Martina Cavestro³; Douglas Lake²; Konstantinos Petritis¹; ¹Translational Genomics Research Institute, Phoenix, AZ; ²School of Life Sciences, Arizona State University, Tempe, AZ; ³San Raffaele Hospital, Milan, Italy
- TP 684 **Quantitation of Cystine and Profiling of related Metabolites in White Blood Cells using a High Resolution Accurate Mass Spectrometry Approach**; Na Pi¹; Shane E. Tichy¹; Jon A. Gangoiti²; Ilya Gertsman²; Bruce A. Barshop²; ¹Agilent Technologies, Inc., Santa Clara, CA; ²UCSD Biochemical Genetics Laboratory, La Jolla, CA
- TP 685 **Multiple Reaction Monitoring MS Protein Analysis of Formalin-Fixed Paraffin-Embedded Tissue**; Robert Sprung; Mary Kay Washington; Amy-Joan Ham; Daniel Liebler; Vanderbilt University Medical Center, Nashville, TN
- TP 686 **AD TMT-SRM Assay Delivering Simultaneous Quantitation of 9 Key Plasma Proteins in Clinical Cohorts Relevant to AD Research**; Darragh P. O'Brien¹; Helen L. Byers¹; James Campbell¹; Loïc Dayon¹; Andreas Güntert²; Karsten Kuhn¹; Rufina Leung²; Simon Lovestone²; Malcolm A. Ward¹; ¹Proteome Sciences plc, London, UK; ²MRC Centre for Neurodegeneration Research, London, UK
- TP 687 **Hypothesis-driven Biomarker-Verification in Acute Pancreatitis**; Stephan Bek; Novartis, Basel, Switzerland
- TP 688 **Advances in Multiplexed Quantification of Proteins: Inter- and Intra-laboratory Evaluation of Multiplexed Peptide MRM-MS Assays using Peptide Immunoaffinity Enrichment**; Eric Kuhn¹; Jeffrey Whiteaker²; Angela Jackson³; Lei Zhao²; Matthew Pope⁴; Keith Rivera¹; Derek Smith³; D. R. Mani¹; Leigh Anderson⁵; Terry Pearson⁴; Amanda Paulovich²; Steven A. Carr¹; ¹Broad Institute, Cambridge, MA; ²Fred Hutchinson Cancer Research Center, Seattle, WA; ³UVic Genome BC Proteomics Centre, Victoria, BC; ⁴University of Victoria, Victoria, BC; ⁵Plasma Proteome Institute, Washington, DC
- TP 689 **The Development of a Targeted Quantitation Assay for Cerebral Spinal Fluid Proteins**; Derek Smith²; Monica H Elliott²; Darryl Hardie²; Mert Pekcan¹; Dominik Domanski²; Angela Jackson²; Juncong Yang²; Alex Camenzind²; Tyra Cross²; Christoph H. Borchers²; ¹Ankara University, Faculty of Veterinary medicine, Ankara, Turkey; ²UVic-Genome BC Proteomics Centre, Victoria, BC
- TP 690 **Developing Diagnostic Biomarkers for Secondary Progressive Multiple Sclerosis using Selected Reaction Monitoring**; Yan Jia¹; Christine Jelinek¹; Scott Newsome²; John Ratchford²; Avindra Nath²; Robert Cotter¹; ¹Johns Hopkins University, School of Medicine, Baltimore, MD; ²Johns Hopkins University, Department of Neurology, Baltimore, MD
- TP 691 **A Suite of Multiple Reaction Monitoring (MRM) Assays to Analyze Cancer-Related Metabolic Pathways**; Lisa J. Zimmerman;

- Patrick J. Halvey; Bing Zhang; Haixia Zhang; Robbert J. C. Slebos; Daniel C. Liebler; *Vanderbilt University, Nashville, TN*
- TP 692 **Identification and Quantitative Analysis for Clinical Proteomics by LC-ESI/MS Using Stable Isotope-labeled Iodoacetanilide;** Sadamu Kurono^{1,2}; Yuka Kaneko^{1,2}; Shuji Matsuura¹; Satomi Niwayama³; ¹Osaka University, Osaka, Japan; ²Wako Pure Chemical Industries, Ltd., Osaka, Japan; ³Texas Tech University, Lubbock, TX
- TP 693 **Measuring H218O Tracer Incorporation on a QQQ-MS Platform Provides a Rapid, Transferable Screening Tool for Relative Protein Synthesis;** James Conway; Douglas Johns; Sheng-Ping Wang; Nykia Walker; Thomas McAvoy; Xuemei Zhao; Stephen Previs; Thomas Roddy; Nathan Yates; Brian Hubbard; Ronald Hendrickson; *Merck Research Laboratories, Rahway, NJ*
- TP 694 **Quantitation of Glucagon-like Peptide-1, GLP-1 (7-36) Amide, and the DPP4-catalyzed Degradation Product GLP-1 (9-36) Amide by LC/MS;** Rong-Sheng Yang¹; Yan-Hui Liu²; Aileen Soriano²; Joyce Hwa¹; ¹Merck Research Laboratories, Rahway, NJ; ²Merck, Kenilworth, NJ
- SYSTEMS BIOLOGY I; 695 - 718**
- TP 695 **Integrative Genomic and Proteomic Analysis of OCT4-Induced Melanoma Stem Cell Differentiation;** Suresh Kumar¹; Vadira B. Bhat²; Xiaowei Xu¹; ¹University of Pennsylvania, Philadelphia, PA; ²Agilent Technologies, Wilmington, DE
- TP 696 **Pattern Recognition Classification of Mass Spectral Profiles as a Tool in Systems Biology: Application to Drug Addiction;** Elena Romanova; Justin Rhodes; Jonathan Sweedler; *University of Illinois, Urbana, IL*
- TP 697 **Comparative and Temporal Proteomics Analysis of RNAi Suppression of BAX/BAK in CHO Cells;** Zhenke Liu¹; Sangwon Cha¹; Jonathan Bones¹; Ray Somak¹; Tomas Rejtar¹; Shujia Dai¹; Chunhua Wang²; Anthony J. Rossomando²; Barry L. Karger¹; ¹Northeastern University, The Barnett Institute, Boston, MA; ²Alnylam Biotherapeutics, Cambridge, MA
- TP 698 **Long-term Effects of High-Fat Diet on Metabolic Pathways in 129Sv and C57B6/J Mouse Livers: A Proteomics Approach;** Eduard Sabido¹; Thomas Porstmann¹; Ching-Yun Chang²; Tim Clough²; Olga Vitek²; Markus Stoffel¹; Ruedi Aebersold¹; ¹IMSB - ETH Zurich, Zurich, Switzerland; ²Purdue University, West Lafayette, IN
- TP 699 **A Multi-omics Approach for the Study of Rapamycin Treatment of a Human Cell Line;** Sudha Rajagopalan; Siji Joseph; Nilanjan Guha; Yugandhar Reddy; Syed Salman Lateef; *Agilent Technologies India Pvt.Ltd, Bangalore, India*
- TP 700 **Quantitative Proteome of Poxvirus-Infected vs. -Uninfected Human Cells;** Wayne Chou; Tuan Ngo; Paul Gershon; *UC-Irvine, Irvine, CA*
- TP 701 **Characterization of the Macaque Sperm Proteome;** Timothy Karr¹; Sheri Skerget¹; Matthew Rosenow²; Konstantinos Petritis²; ¹Arizona State University, Tempe, AZ; ²Translational Genomics Research Institute, Phoenix, AZ
- TP 702 **Applying Isobaric Multiplexing Technology to Unravel Proteome Wide Environmental Stress Adaptation in Budding Yeast;** Joshua T. Wilson-Grady; Wilhelm Haas; Steven Gygi; *Harvard Medical School, Boston, MA*
- TP 703 **Integrated Microarray and Quantitative Proteomic Analysis Identifies Proteostasis Network Changes in a Mouse Model of Huntington's Disease;** Benbo Gao¹; Ken Longo¹; Eric Roskelley¹; Mark P. Jedrychowski²; Edward L. Huttlin²; Steven P. Gygi²; Walter Newman¹; Dan Garza¹; Brad Geddes¹; Peter H. Reinhart¹; Hui Ge¹; ¹Proteostasis Therapeutics Inc., Cambridge, MA; ²Department of Cell Biology, Harvard Medical School, Boston, MA
- TP 704 **Revealing the Dynamics of the Acute Promyelocytic Proteome During Remission Using Pulsed SILAC and Mass Spectrometry;** Tony Ly; Francois-Michel Boisvert; Yasmeen Ahmad; Mark Larance; Angus Lamond; *Wellcome Trust Centre for Gene Regulation and Expr, Dundee, UK*
- TP 705 **Systems Immunobiology of HIV and HCV: A Proteomics Approach;** Daniela Schlatzer²; Donald D. Anthony¹; Yawen Chen¹; Giridharan Gokulrangan²; Fred Hazlet²; Xiaolin Li²; Sara Tomechko²; Jill Barnholtz-Sloan¹; Julia M. Sugalski¹; Mark Chance²; ¹Case Western Reserve University, Cleveland, OH; ²Center for Proteomics and Bioinformatics, CWRU, Cleveland, OH
- TP 706 **Quantitative Proteomics of the Yeast Cell Cycle in Single LC MS/MS Runs on a Novel Quadrupole Orbitrap Mass Spectrometer;** Nagarjuna Nagaraj¹; Annette Michalski¹; Juergen Cox²; Richard Scheltema¹; Oliver Lange³; Eugen Damoc⁴; Stevan R. Horning⁵; Matthias Mann⁶; ¹MaxPlanck Institute for Biochemistry, Munich, Germany; ²Max-Planck-Institute of Biochemistry, Martinsried, Germany; ³Thermo Electron (Bremen) GmbH, Bremen, Germany; ⁴Thermo Fisher Scientific, Bremen, Germany; ⁵Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany; ⁶Max Planck Institute of Biochemistry, D Martinsried, Germany
- TP 707 **Use of Spectral Counting and AMT to Quantify Changes in Renal Proximal Convoluted Tubules during Onset of Metabolic Acidosis;** Scott Walmsley; Norman Curthoys; *Colorado State Univ, Fort Collins, CO*
- TP 708 **Differential Proteomic Analysis of Hypoxic Tumor Microenvironment in vivo in Fibrosarcoma Inoculated Mice Breathing Atmospheric or Hyperoxic Oxygen;** Shujia Dai¹; Kengo Moriyama²; Dmitriy Lukashev²; Zhenke Liu¹; Michail Sitkovsky²; Barry L. Karger¹; ¹Barnett Institute, Northeastern University, Boston, MA; ²Bouvé College of Health Sciences, Boston, MA
- TP 709 **Differential Expression Proteomic Phenotyping of Enhanced Survivability of Bacillus pumilus following 18-Month Extraterrestrial Exposure Aboard the International Space Station;** Arthur Moseley¹; Laura Dubois¹; Erik Soderblom¹; Will Thompson¹; Lisa Carnell²; George Fox³; Gerda Horneck⁴; Parag Vaishampayan⁵; Kasthuri Venkateswaran⁵; ¹Duke University Medical Center, Durham, NC; ²NASA Langley Research Center, Hampton, VA;

³University of Houston, Houston, TX; ⁴Aerospace Medicine, DLR German Aerospace Center, Koeln, Germany; ⁵Jet Propulsion Laboratory, Caltech, Pasadena, CA

- TP 710 **Functional Proteomics Reveals a Novel Regulator of Breast Cancer Growth and Metastasis**; Miao Liu; Saeid Jami; Xin Huang; Rakesh Singh; Shi-Jian Ding; *University of Nebraska Medical Center, Omaha, NE*
- TP 711 **SILAC-based Quantitative Proteomics in the Nematode *C. elegans***; Mark Larance; Aymeric Bailley; Anton Gartner; Angus Lamond; *Wellcome Trust Centre for GRE, Dundee, UK*
- TP 712 **Mass Spectrometric Studies on Epigenetic Interaction Networks in Cell Differentiation**; Lei Xiong²; Agus Darwanto¹; Seema Sharma³; Jason Herring¹; Maria Filippova¹; Valery Filippov¹; Yinsheng Wang²; Chien-Shing Chen¹; Penelope J. Duerksen-Hughes¹; Lawrence C. Sowers¹; Kangling Zhang¹; ¹Loma Linda University, Loma Linda, CA; ²University of California, Riverside, CA; ³Thermo Fisher Scientific, San Jose, CA
- TP 713 **PKC Phosphorylation of Cardiac Troponin I is Up-regulated in Spontaneously Hypertensive Heart Failure Rat**; Xintong Dong¹; Jiang Zhang¹; Yi-chen Chen¹; Marius Sumandea²; Ying Ge¹; ¹University of Wisconsin-Madison, Madison, WI; ²University of Kentucky, Lexington, KY
- TP 714 **A Proteomics Approach to Uncover Steroid Hormone Signaling Pathways**; Karen Sap; Karel Bezstarosti; Dick Dekkers; Peter Verrijzer; Jeroen Demmers; *Erasmus Medical Center, Rotterdam, Netherlands*
- TP 715 **A New Approach to Strain Engineering Using Quantitative Proteomics**; Miryam Kadkhodayan; Timothy Cole; Ezhilkani Subbian; Jeanne Benoit; Shannon Gladen; Yoram Barak; Jeffrey Colbeck; Soni Shukla; Guillaume Cottarel; Giselle Janssen; *Codexis, Inc., Redwood City, CA*
- TP 716 **Genome-wide Phenotyping of *Escherichia coli* by High Throughput, Accurate Mass Metabolomics**; Nicola Zamboni; Tobias Fuhrer; Boris Begemann; Uwe Sauer; *ETH Zürich, Zürich, Switzerland*
- TP 717 **Combinatorial Expression of n-butanol Responsive Genes to Explore Stress Resistant Phenotypes in *Escherichia coli***; Becky Rutherford¹; Rafael Rosengarten²; Robert Dahl¹; Peter Benke²; Aindrita Mukhopadhyay²; Jay D. Keasling^{1,2}; ¹University of California, Berkeley, Berkeley, CA; ²Joint BioEnergy Institute, Emeryville, CA
- TP 718 **Activity Based Protein Profiling to Measure Changes in Enzymatic Activity of Anaerobic, Cellulolytic Bacteria**; Peter McQueen^{1,2}; Tom Rydzak^{1,3}; Dmitri Shamshurin^{1,2}; Namita Kanwar^{1,2}; Richard Sparling^{1,3}; David Levin^{1,4}; Oleg Krokhin^{1,2}; John Wilkins^{1,2}; ¹University of Manitoba, Winnipeg, Canada; ²MB Centre for Proteomics and Systems Biology, Winnipeg, Canada; ³Department of Microbiology, Winnipeg, Canada; ⁴Department of Biosystems Engineering, Winnipeg, Canada

7:30-8:00 amAll Wednesday posters should be set
 10:30 am-2:30 pm All poster authors should be present
 11:45 am-12:15 pm . Lunch break for odd-numbered posters
 12:15-12:45 pm.....Lunch break for even-numbered posters
 7:30-8:00 pm Remove all Wednesday posters

Ion/Molecule, Ion/Ion, Ion/Electron Interactions; 001 - 024
 Ion Activation/Dissociation; 025 - 040
 Isotope Ratio MS; 041 - 046
 Ion Structure/Energetics; 047 - 068
 High Mass Accuracy/High Performance MS: Applications II;
 069 - 092
 Personal Care Products; 093 - 094
 LC-MS: Sample Preparation; 095 - 105
 Small Molecule - Qualitative Analysis; 106 - 125
 Small Molecule - Quantitative Analysis; 126 - 154
 Diagnostic Clinical Chemistry II; 155 - 171
 Nucleic Acids II; 172 - 192
 Forensics: General; 193 - 214
 Metabolomics: Untargeted Profiling I; 215 - 236
 Drug Metabolism: Quantitative Analysis II; 237 - 260
 Drug Metabolism: Qualitative Analysis II; 261 - 286
 Metabolomics: General I; 287 - 306
 Environmental Analysis: Pharmaceuticals and Pesticides;
 307 - 331
 Organic and Organometallic Supramolecular Complexes;
 332 - 343
 Natural Products I; 344 - 360
 Informatics: Small Molecular Identification and
 Characterization; 361 - 366
 Informatics: Validation; 367 - 375
 Informatics: Quantification; 376 - 406
 Imaging MS: Small Molecules; 407 - 429
 Imaging MS: Disease Markers; 430 - 442
 Imaging MS: Large Molecules; 443 - 455
 Peptides: PTM Identification II; 456 - 476
 Peptides: Fragmentation Mechanisms; 477 - 504
 Peptides: Quantitative Analysis - Label Free I;
 505 - 531
 Intact Protein Complexes; 532 - 553
 H/D Exchange: Hardware, Software and Methodology;
 554 - 566
 Biomolecular Structure Analysis: Chemical Crosslinking;
 567 - 588
 Proteomics: Method Development in Clinical Applications;
 589 - 604
 Proteomics: Sample Preparation; 605 - 630
 Proteomics: Plasma; 631 - 646
 Biomarkers: Discovery II; 647 - 660
 Biomarkers: Quantitative Analysis; 661 - 690
 Systems Biology II; 691 - 710

ION/MOLECULE, ION/ION, ION/ELECTRON INTERACTIONS; 001 - 024

- WP 001 **Backbone Cleavage versus Sidechain Dissociation in Electron Detachment Dissociation (EDD) of Multiply Deprotonated Proteins;** Barbara Ganisl; Monika Taucher; Kathrin Breuker; *University of Innsbruck, Innsbruck, Austria*
- WP 002 **Study of Electron Transfer Dissociation Fragment Ion Structures Using Ion Mobility Mass Spectrometry;** Unige A. Laskay¹; Jeffery M. Brown²; Wenzhou Li¹; Vicki H. Wysocki¹; ¹University of Arizona, Tucson, AZ; ²Waters Corporation, Manchester, UK
- WP 003 **Experimental and Theoretical Investigations of Electron Capture and Transfer Dissociation**

- WP 004 **of Protonated and Alkylated Model Peptoids;** Bogdan Bogdanov; Jianhua Ren; *University of the Pacific Department of Chemistry, Stockton, CA*
- WP 005 **Electron Transfer Dissociation (ETD) of Cu-peptide Complexes;** Jia Dong¹; Desmond Kaplan²; Richard Vachet¹; ¹University of Massachusetts, Amherst, MA; ²Bruker Daltonics, Billerica, MA
- WP 006 **Using Electron Capture Dissociation to Define Charge Site Location in Protein Ions;** Natalie J. Thompson; David M. Crizer; Takashi Baba; Gary L. Glish; *University of North Carolina, Chapel Hill, NC*
- WP 007 **Selective Ion-Ion Charge Reduction of Multiply Protonated Heterogeneous ESI Ions;** Jeffery M Brown²; Michael Morris²; Bill Gigante¹; Les Walling¹; Paul Schnier¹; ¹Amgen, Thousand Oaks, CA; ²Waters Corporation, Manchester, UK
- WP 008 **Comparison of CID, ETD, and Metastable Atom-Activated Dissociation (MAD) of Phosphorylated Peptides. ;** Glen Jackson¹; Shannon Cook¹; Carolyn M. Zimmermann¹; Ralf Hoffmann²; ¹Ohio University, Athens, OH; ²University of Leipzig, Leipzig, Germany
- WP 009 **Electron Transfer Dissociation (ETD) of Peptides Containing Intramolecular Disulfide Bonds;** Yu Xia¹; Scott Cole¹; Xiaoxiao Ma²; ¹Purdue University, West Lafayette, IN; ²Tsinghua University, Beijing, China
- WP 010 **Electron-induced Ionization Provides Information on Cross Sections and Ionization Energies of Gaseous Multiply Charged Proteins;** Aleksey Vorobyev; Yury O. Tsybin; *Ecole Polytechnique Federale, Lausanne, Switzerland*
- WP 011 **Effects of Counterion on Sodium and Acid Adduction to Proteins: Implications for the ESI-MS of Proteins and Complexes;** Samuel Merenbloom; Tawnya Flick; Evan R. Williams; *University of California, Berkeley, CA*
- WP 012 **The Utilization of Ion/Ion Reactions for Improved MS/MS Spectral Purity;** Catherine Vincent; Aaron Ledvina; Michael S. Westphall; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- WP 013 **Suppression of Analyte Ionization during Electrospray LC-MS-MS by Plasma Matrix Phospholipids;** Yongchao Li¹; Richard B. Van Breemen¹; Min Chang²; ¹University of Illinois, Chicago, IL; ²Biogen Idec, San Diego, CA
- WP 014 **Going Negative in Metal Ion Chemistry;** Jason DiMuzio; Sharon Curtis; Paul Michael Mayer; *University of Ottawa, Ottawa, Canada*
- WP 015 **A Mechanistic Study on Electron Capture Dissociation of Metal-Adducted Oligosaccharides;** Yiqun Huang; Xiang Yu; Catherine E. Costello; Cheng Lin; *Boston University, Boston, MA*
- WP 016 **Analysis of Small Inhibitory RNA (siRNA) Using Negative Ion Electron Transfer Dissociation in Linear Ion Trap;** Zhiqi Hao¹; Derek Bailey²; Jason Russell²; Laurance Lee³; Graeme McAlister²; Michael Westphall²; Joshua Coon²; Andreas Huhmer¹; ¹Thermo Fisher Scientific, San Jose, CA; ²University of Wisconsin, Madison, WI; ³Sirna Therapeutics, San Francisco, CA
- WP 017 **Detection of Chemical Warfare Agent Simulants Using Ion-Molecule Reactions in a**

- WP 017 **Miniature Rectilinear Ion Trap Mass Spectrometer;** Adam M. Graichen; Richard Vachet; *University of Massachusetts, Amherst, MA*
- WP 018 **Ion-Molecule Reactions as a Tool to Locate the Solvent Dependent Charge-Sites of Ions Generated by Electrospray Ionization;** Freneil Jariwala; Athula B. Attygalle; *Stevens Institute of Technology, Hoboken, NJ*
- WP 019 **Laboratory Studies of Carbon Containing Ions and Their Reactions in the Interstellar Medium;** Cesar Contreras; Claire Ricketts; Farid Salama; *NASA, Moffett Field, CA*
- WP 020 **DIAM: A New Experimental Set-Up Designed for the Investigation of Irradiation of Nanosystems in the Gas Phase;** Guillaume Bruny¹; Victor Buridon¹; Khalid El Farkh¹; Sam Eden¹; Stefan Feil¹; Mahdi M. Harb¹; Cécile Teyssier¹; Hassan Abdoul-Carime¹; Bernadette Farizon¹; Michel Farizon¹; Said Ouaskit²; Tilmann D. Märk³; ¹CNRS/IN2P3, UMR5822, IPNL - Université Lyon 1, Villeurbanne, France; ²CNRS (URAC 10), Faculté des sciences Ben M'sik, Casablanca, Morocco; ³Leopold Franzens Universität, IfP, Innsbruck, Austria
- WP 021 **On the Mechanism of the aza-Morita-Baylis-Hillman Reaction (aza-MBH): The ESI-MS Fishing of a New Unique Intermediate;** Thais Regiani^{1, 2}; Vanessa Gonçalves dos Santos¹; Marla Narciso Godoi¹; Boniek Gontijo Vaz¹; Fernando Coelho²; Marcos Nogueira Eberlin¹; ¹Thomson Mass Spectrometry Lab, Campinas, Brazil; ²Lab of Synthesis of Natural Products and Drugs, Campinas, Brazil
- WP 022 **Reactivity of an Aromatic σ,σ,σ -Triradical: the 2,4,5-Tridehydropyridinium Cation;** Mohammad Sabir Aqueel; Brian.A. Niedzwiecki; John Nash; Hilka Kenttamaa; *Purdue University, West Lafayette, IN*
- WP 023 **Comparison of the Reactivity of Isomeric Hydroxy-Substituted Dehydropyridinium Ions Toward Methanol in Solution and in the Gas Phase;** Peggy Williams; Fanny Widjaja; Zhicheng Jin; Jennifer Reece; Bartłomiej Jankiewicz; Hilka Kenttamaa; John Nash; *Purdue University, West Lafayette, IN*
- WP 024 **Gas Phase Reactions of H Atoms with Anionic Carbon-nitrogen Species and Polycyclic Aromatic Hydrocarbons;** Zhibo Yang; Nicholas Demarais; Oscar Martinez Jr; Callie Cole; Theodore P. Snow; Veronica M. Bierbaum; *University of Colorado, Boulder, CO*
- WP 025 **Proton Affinities of the Cyclic Peptides;** Xiaoning Zhao; Jianhua Ren; *University of the Pacific, Stockton, CA*
- WP 026 **Ion Activation/Dissociation; 025 - 040**
- WP 027 **Dissociative Photoionization of Peptides Ions in the Gas Phase Probed by Synchrotron Radiation;** Francis Canon¹; Aleksandar Milosavljevic^{1, 2}; Matthieu Réfrégiers¹; Laurent Nahon¹; Alexandre Giuliani^{1, 3}; ¹Synchrotron SOLEIL, Saint-Aubin, France; ²Institute of Physics Belgrade, Belgrade, Yugoslavia; ³CEPIA, INRA, Nantes, France
- WP 028 **A Mechanistic Look at Femtosecond Laser-Induced Ionization/Dissociation (fs-LID) of Protonated α -Amino Acids and Peptides;** Christine L. Kalcic; Gavin E. Reid; Marcos Dantus; *Michigan State University, East Lansing, MI*
- WP 029 **Negative Electron Transfer Dissociation with Supplemental Collisional or Infrared Photoactivation of Multiply Charged Peptide Anions;** Jared Shaw; Jennifer Brodbelt; *The University of Texas at Austin, Austin, TX*
- WP 030 **Enhanced Photodissociation Efficiency of Cysteine Peptides by Attachment of Thiol-Reactive Chromophores;** Victoria Dominguez¹; Jennifer Brodbelt¹; ¹University of Texas at Austin, Austin, TX
- WP 031 **193 nm Ultraviolet Photodissociation of Oligosaccharides;** Byoung Joon Ko¹; Jennifer Brodbelt¹; ¹The University of Texas, Austin, TX
- WP 032 **Characterization of Heme c using Matrix Assisted Laser/Desorption Ionization Mass Spectrometry;** Hyo-Jik Yang^{1, 2}; Kyu Hwan Park²; Hyun Sik Kim²; Jeongkwon Kim¹; ¹Chungnam National University, Daejeon, South Korea; ²Korea Basic Science Institute, Daejeon, South Korea
- WP 033 **Differentiating Isobaric Steroid Hormone Metabolites Using Multi-Stage Tandem Mass Spectrometry;** Lauren Tedmon¹; Hien Nguyen¹; Kevin Schug¹; Jane Wigginton²; James Simpkins³; ¹University of Texas at Arlington, Arlington, TX; ²University of Texas at Southwestern, Dallas, TX; ³University of North Texas Health Science Center, Fort Worth, TX
- WP 034 **Fragmentation of Xanthene Dyes by Laser and Collisional Activation in a High Resolution FT-ICR Mass Spectrometer;** Jonathan Peters; Jürgen Grotemeyer; *Christian-Albrechts-Univ, Kiel, Germany*
- WP 035 **Bond Dissociation Energy Determinations of Group-11 (Cu, Ag, Au) Cyanide Complexes using Electrospray Ionization Mass Spectrometry and Collision Induced Dissociation;** Barbara Walton; Guido F. Verbeck; *University of North Texas, Denton, TX*
- WP 036 **Structures and Collision-induced Dissociation Pathways of Protonated 2'-Deoxynucleoside-5'-Monophosphates Investigated by Guided Ion Beam Tandem Mass Spectrometry and Theoretical Calculations;** Ranran Wu; Yuan-wei Nei; Yu Chen; Mary Rodgers; *Wayne State University, Detroit, MI*
- WP 037 **Q0 DC Dipolar Activation in a Linear Ion Trap Time of Flight Instrument;** Ian Webb; *Purdue University, West Lafayette, IN*
- WP 038 **A Comparison of the fragmentation Pathways of First Generation Protonated Nitrile and Amine Terminated PPI Dendrimers;** William D. Price; Josh Hendrix; Jacob Kilgore; *Marshall University, Huntington, WV*
- WP 039 **Relative Stability of Sequence Ions Generated by Tandem Mass Spectrometry;** Benjamin J. Bythell¹; Christopher L. Hendrickson^{1, 2}; Alan G. Marshall^{1, 2}; ¹National High Magnetic Field Laboratory, Tallahassee, FL; ²Florida State University, Department of Chemistry, Tallahassee, FL
- WP 040 **Exploding C-Alpha Amide Radicals as Model Systems for Simple Z-Ions;** Joshua A. Gregersen; Frantisek Turecek; *University of Washington, Seattle, WA*
- WP 041 **Isomeric Distinction of Small Oligosaccharides: A Bottom-Up Approach using the Kinetic Method;** Mohamed Major¹; Thierry Fouquet²; Laurence Charles¹; ¹Aix-

Marseille Universities, Marseille, France; ²DAMS, Centre de Recherche Public Henri Tudor, Esch sur Alzette, Luxembourg

WP 040 **Metastable Atom-Activated Dissociation Mass Spectrometry (MAD-MS) of Phosphopeptide and Sulfopeptide Anions.**; Shannon Cook; Robert Deimler; Glen Jackson; Ohio University, Athens, OH

ISOTOPE RATIO MS; 041 - 046

WP 041 **Study of Measurement of Se Isotopes with MC-ICP-MS and CRM**; Ren Tongxiang; National Institute of Metrology, Beijing, China

WP 042 **Development of Complementary Methods for 3-O-methyl-D-glucose and D-glucose in Clinical Samples using GC/MS and GC/C/IRMS**; Manisha Shrestha; Peter Walter; NIDDK/NIH, Bethesda, MD

WP 043 **Determination of Chromium Species and Mass Balance in Food Supplements using Speciated Isotope Dilution Mass Spectrometry**; G. M. Mizanur Rahman^{1,2}; Naudia Martone¹; H. M. Skip Kingston¹; Matt Pamuku²; ¹Duquesne University, Pittsburgh, PA; ²Applied Isotope Technologies, Inc., Sunnyvale, CA

WP 044 **The Quantitative Proteome of the Chlamydia-Infected Cell, Early and Late during Infection**; Christopher Rollins; Wayne Chou; Luis DeLa Maza; Paul Gershon; UC-Irvine, Irvine, CA

WP 045 **Absolute Measurement of carbon Isotope Ratios with Accelerator Mass Spectrometry**; John Vogel; Jason Giacomo; Stephen Dueker; Vitalea Science, Davis, CA

WP 046 **Measuring Protein Half Life *in vivo* While Compensating For Tissue-Dependent Amino Acid Tracer Absorption Rate Differences**; Nicholas Shulman; Gennifer Merrihew; Dao-Fu Dai; Evelyn S. Vincow; Leo Pallanck; Peter Rabinovitch; Michael J. Maccoss; University of Washington, Seattle, WA

ION STRUCTURE/ENERGETICS; 047 - 068

WP 047 **Thermochemical Properties of Fluorinated Borohydrides**; Jamelle Williams; Paul G. Wenthold; Purdue University, West Lafayette, IN

WP 048 **Experimental Determination of the Gas-Phase Heat of Formation of 2,3 and 3,4-Pyridine N-oxide**; Nathan Rau; Paul Wenthold; Purdue University, West Lafayette, IN

WP 049 **Nazarov Cyclization of 1,5-Bis-(2-methoxyphenyl)-1,4-pentadien-3-one in the Gas and Condensed Phases: An Experimental and Theoretical Study**; George Mathai¹; June Cyriac¹; Daryl Giblin²; Michael L. Gross²; ¹Sacred Heart College, Kochi, India; ²Washington University, St Louis, MO

WP 050 **Cyclization and Fragmentation of Protonated Natural Curcumin: An Experimental and Theoretical Study**; Daryl Giblin¹; June Cyriac²; George Mathai²; Michael L. Gross¹; ¹Washington University, St Louis, MO; ²Sacred Heart College, Kochi, India

WP 051 **Xenon Trapping: A Novel Method for Stabilizing Host-Guest Complexes of Decamethylcucurbit[5]uril With Alkali Metals**; Daniel Mortensen; David V. Dearden; Brigham Young University, Provo, UT

WP 052 **Formation and Characterization of Cadmium Clusters Containing Sulfides and Bisulfides Using CID and Vibrational Spectroscopy**;

Kaitlin Papson¹; Giel Berden²; Jos Oomens²; Douglas P. Ridge¹; ¹University of Delaware, Newark, DE; ²FOM Institute for Plasma Physics Rijnhuizen, Nieuwegein, Netherlands

WP 053 **EIMS of Alkylated Sulfabenzamides: Quantum Chemistry of an Unusual Rearrangement**; Karl Irikura; Nino Todua; Kirill Tretyakov; Anzor Mikaia; Stephen Stein; National Institute of Standards and Technology, Gaithersburg, MD

WP 054 **Dissociation Kinetics of Protein-fatty Acid Interactions in the Gas Phase**; Lan Liu²; Klaus Michelsen¹; Elena Kitova²; Paul Schnier¹; Alex Brown²; John Klassen²; ¹Amgen, Thousand Oaks, CA; ²University of Alberta, Edmonton, Canada

WP 055 **Comparison of the Dissociation Kinetics of the Streptavidin-Biotin Interaction in Solution and in the Gas Phase**; Lu Deng; Elena Kitova; John Klassen; University of Alberta, Edmonton, Canada

WP 056 **Investigating the Fe^{IV}O Active Site of C-H Bond Activating Enzymes in the Gas Phase**; William A. Donald¹; Christine J. McKenzie²; Richard A. J. O'hair¹; ¹University of Melbourne, Melbourne, Australia; ²The University of Southern Denmark, Odense, Denmark

WP 057 **An Investigation of the Energetics and Conformations of Polymer/Substrate Complexes Studied with RRKM Modeling, Molecular Dynamics and Ion-Mobility Spectrometry**; Justin Renaud; Paul Michael Mayer; University of Ottawa, Ottawa, Canada

WP 058 **Energies of Small Polycyclic Aromatic Hydrocarbons; Interstellar Molecules**; Brandi West; Paul Michael Mayer; University of Ottawa, Ottawa, Canada

WP 059 **Superhalogen Anion KF₃⁻; Vertical Electron Detachment and Dissociation Energies**; Seydina Lo; Alan Hopkinson; CRMS/YORK University, Toronto, Canada

WP 060 **Exotic Molecules on Titan? Structural Characterization of Unsaturated C₄H₅N₂ Species by Negative Ion FT-ICR MS and MS/MS for Laboratory Made Tholins**; Arpad Somogyi¹; Mark Smith¹; Roland Thissen²; Veronique Vuitton²; ¹University of Arizona, Tucson, AZ; ²UJF-Grenoble, CNRS-INSU, Institut de Planetologie, Grenoble, France

WP 061 **Mass Spectrometry of 1,1-Diamino-2,2-dinitroethene (FOX-7)**; Miroslav Polasek¹; Jan Zabka¹; Zdenek Jalovy²; ¹J. Heyrovsky Institute of Physical Chemistry, Praha 8, Czech Republic; ²University Pardubice, Pardubice, Czech Republic

WP 062 **Study of Fragmentation Pathways of Persistent Free Radical Ions: Examples of SG1 and TEMPO**; Cathie Marchal; Christophe Chendo; Laurence Charles; Vincent Ledentu; Didier Siri; Denis Bertin; Didier Gigmes; University Aix-Marseille I & III, Marseille Cedex, France

WP 063 **Formation of Diphosphine-Protected Gold Clusters: Cationic Cluster Formation from Digold Complexes as a Platform for Growth**; John Pettibone¹; Jeffrey W. Hudgens¹; Thomas Senftle²; Denis Bergeron¹; ¹NIST, Rockville, MD; ²Notre Dame University, Notre Dame, IN

WP 064 **Fragmentation Mechanisms of Peptide's Cation-Radicals Formed in Collision with**

- Electrons of Well-Determined Energies;** Yury V. Vasil'ev; Douglas F. Barofsky; Max L. Deinzer; *Oregon State University, Corvallis, OR*
- WP 065 **Intercluster Reactions Show that Sulfur Betaine is a Better Methyl Cation Donor than Nitrogen Betaine;** Linda Feketeova; Ellie Jung-Hwa Yoo; George N. Khairallah; Richard A. J. O'Hair; *The University of Melbourne, Melbourne, Australia*
- WP 066 **Number of Fragment Spectrometry in CID of Mass Selected Ions: A New Tool for Ion Characterisation in the MS-MS Frame;** Khalid El Farkh¹; Guillaume Bruny¹; Victor Buridon¹; Stefan Feil¹; Mahdi M. Harb¹; Cécile Teyssier¹; Hassan Abdoul-Carime¹; Bernadette Farizon¹; Michel Farizon¹; Tilmann D. Märk²; ¹CNRS/IN2P3, UMR5822, IPNL - Université Lyon 1, Villeurbanne, France; ²Leopold Franzens Universität, IFP, Innsbruck, Austria
- WP 067 **An Ion Structure Calculation Package;** David M. Crizer; Alessandra Ferzoco; Gary L. Glish; *University of North Carolina, Chapel Hill, NC*
- WP 068 **Influence of Salt Bridge Interactions in the Gas Phase peptide-DNA Complex Stability;** Bessem Brahim; Sandra Alves; Jean-Claude Tabet; *Université Paris VI, Paris, France*
- HIGH MASS ACCURACY/HIGH PERFORMANCE MS: APPLICATIONS II; 069 - 092**
- WP 069 **Deciphering the Cell Envelope Proteome of Escherichia coli;** Malvina Papanastasiou¹; Georgia Orfanoudaki^{1, 2}; Marios Frantzeskos-Sardis^{1, 2}; Panagiotis Mavroudis^{1, 2}; Spyridoula Karamanou¹; Anastassios Economou^{1, 2}; ¹Inst of Molecular Biology, Iraklio-Crete, Greece; ²Department of Biology, UoC, Iraklio-Crete, Greece
- WP 070 **High Mass Accuracy Provides Enhanced Selectivity for the GC/MS Analysis of Pesticides in Food;** Thomas P. Doherty; Phil Wylie; Chris Sandy; Bill Russ; *Agilent Technologies, Santa Clara, CA*
- WP 071 **Evaluation of a Novel Ion Trap Based Higher Energy Collision Induced Dissociation for Structure Elucidation of Mid-Molecular Weight Compounds;** Silvi Chacko¹; Jonathan Josephs¹; Julie Horner²; August Specht²; ¹Bristol-Myers Squibb, Pennington, NJ; ²Thermo Fisher Scientific, San Jose, CA
- WP 072 **Simultaneous Analysis of Hydroxylated and Non Hydroxylated Polybromodiphenyl Ethers by LC-APPI-HRMS;** Charlotte Marteau¹; Sylvie Chevolleau¹; Isabelle Jouanin¹; Bruno Le Bizec²; Daniel Zalko¹; Laurent Debrauwer¹; Jean-Philippe Antignac²; ¹UMR 1331 Toxalim INRA INP, Toulouse Cedex 3, France; ²ONIRIS USC 2013 INRA LABERCA, Nantes, France
- WP 073 **A Method for the Accurate Determination of Monoisotopic Precursors in High-Resolution Mass Spectra;** Zuofei Yuan^{1, 2}; Chao Liu^{1, 2}; Haipeng Wang^{1, 2}; Ruixiang Sun^{1, 2}; Yan Fu^{1, 2}; Leheng Wang¹; Hao Chi^{1, 2}; You Li^{1, 2}; Liyun Xiu^{1, 2}; Wenping Wang^{1, 2}; Simin He^{1, 2}; ¹Institute of Computing Technology, CAS, Beijing, China; ²Key Lab of Intelligent Information Processing, CAS, Beijing, China
- WP 074 **Qualitative Comparison of Wine Process Samples with UHPLC and Ultra High Resolution TOF-MS;** John Chakel; Joe Binkley; Matthew Giardina; John R. Heim; Jeffrey Patrick; Kevin Siek; *LECO Corporation, St Joseph, MI*
- WP 075 **High Resolution Mass Spectrometry for Non-Targeted Analysis: Chromatographic Implications;** Timothy R. Croley¹; Kevin D. White²; John H. Callahan³; Steve Musser⁴; ¹FDA, College Park, MD; ²US FDA/CFSAN, College Park, MD; ³FDA/CFSAN, College Park, MD; ⁴US FDA, College Park, MD
- WP 076 **Improving Proteomics Mass Accuracy by Optimized Offline Lock Mass;** Ying Zhang; Zhihui Wen; Laurence Florens; Michael Washburn; *Stowers Institute for Medical Research, Kansas City, MO*
- WP 077 **Evaluation of Quantitative Performance for Testosterone Analysis in Plasma on a Novel Quadrupole Orbitrap Mass Spectrometer;** Xiang He; Marta Kozak; *ThermoFisher Scientific, San Jose, CA*
- WP 078 **Improving Comprehensiveness, Sensitivity, and Retrospectivity of Doping Controls using a Benchtop Quadrupole-Orbitrap MS for Plasma and Dried Blood Spot Analysis;** Mario Thevis¹; Andreas Thomas¹; Catharina Crone²; Markus Kellmann²; Thomas Möhring²; Stevan Horning²; Wilhelm Schänzer¹; ¹German Sport University, Cologne, Germany; ²ThermoFisher Scientific, Bremen, DE
- WP 079 **High-Throughput Caco-2/TC7 Human Intestinal Absorption Screening using Laser Diode Thermal Desorption-Atmospheric Pressure Chemical Ionization Coupled to Exactive Benchtop Orbitrap;** Bernard Julian¹; Cyril Bertrand¹; Olivier Fedeli¹; Patricia Moliner¹; Chloe Grosjean¹; Marion Layssac¹; Christel Marcou¹; Patrice Tremblay²; Pierre Picard³; Marie-Pierre Pavageau⁴; Laurence Fajas¹; Gerard Fabre¹; Freddy Sadoun¹; ¹Sanofi-Aventis, Montpellier, France; ²Phytronix Technologies, Quebec, QC; ³Phytronix Technologies, Inc., Quebec, QC; ⁴ThermoFisher, Paris, France
- WP 080 **Modern Proteomics with CE-MS : Fast, High Resolution Peptide Separations by Capillary Electrophoresis with LTQ Orbitrap Velos and Bruker Quadrupole Time-of-Flight;** Roza Wojcik¹; Michael Maccoss¹; William Boggess²; Norman J. Dovichi²; ¹University of Washington, Seattle, WA; ²University of Notre Dame, Notre Dame, IN
- WP 081 **Application of Absorption-mode Data Analysis to Biological FT-ICR Mass Spectrometry;** Feng Xian¹; Christopher L. Hendrickson^{1, 2}; Gregory T. Blakney²; Steven C. Beu³; Alan G. Marshall^{1, 2}; ¹Department of Chemistry, Florida State University, Tallahassee, FL; ²ICR Program, National High Magnetic Field Laboratory, Tallahassee, FL; ³S C Beu Consulting, Austin, TX
- WP 082 **A Quadrupole Orbitrap Mass Spectrometer with Very High Sequencing Speed Applied to Shotgun Proteomics;** Annette Michalski¹; Nagarjuna Nagaraj¹; Juergen Cox¹; Eugen Damoc²; Oliver Lange²; Andreas Wieghaus²; Alexander Makarov²; Matthias Mann¹; Stevan R. Horning²; ¹Max Planck Institute of Biochemistry, Martinsried, Germany; ²Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany

- WP 083 **Animal Glues in Paintings: Identification of the Animal Species by Proteomics**; Sophie Dallongeville¹; Nicolas Garnier²; Caroline Tokarski¹; Christian Rolando¹; ¹Univ. de Lille 1, Sciences et Technologies, Villeneuve D'ascq, France; ²Laboratoire Nicolas Garnier, Vic le Comte, France
- WP 084 **Clinical Toxicology Screening using Accurate-Mass Identification and MS/MS Library Searching on the AB SCIEX TripleTOF™ 5600 LC/MS/MS System**; Lisa Sapp^{1,2}; Michael J. Y. Jarvis^{1,2}; Adrian Taylor^{1,2}; ¹AB SCIEX, Framingham, MA; ²AB SCIEX, Concord, Canada
- WP 085 **Optimizing Chromatography for Maximizing Protein Identifications and Sample Throughput**; Shixin Sun²; Eastwood Leung¹; ¹Baylor College Of Medicine, Houston, TX; ²ABSCIEX, Framingham, MA
- WP 086 **Molecular Characterization of Dissolved Organic Matter from Greenland Ice Cores by Fourier Transform Ion Cyclotron Resonance Mass Spectrometry (FTICR-MS)**; Rachel Sleighter¹; Joshua Marsh¹; Vanessa Boschi²; Amanda Grannas²; Patrick Hatcher¹; ¹Old Dominion University, Norfolk, VA; ²Villanova University, Villanova, PA
- WP 087 **Data-Dependent Middle-Down ECD and CID Combined with Intact Protein Profiling for Histone Characterization using FT-ICR Mass Spectrometry**; Anastasia Kalli; Michael J Sweredoski; Sonja Hess; Caltech, Pasadena, CA
- WP 088 **High Resolution TOF MS Quantitation of Large Array Pooling for High Throughput LCMS**; Elliott Jones; Shaokun Pang; Richard Laumen; Loren Olson; AB Sciex, Foster City, CA
- WP 089 **A Comparative Top-Down Proteomics Pipeline for Biomarker Discovery and Validation**; Steven Patrie; Michael Roth; Jaekuk Kim; Daniel Smith; UT Southwestern Medical Center, Dallas, TX
- WP 090 **Top-Down Proteomics on Orbitrap-Based Mass Spectrometers**; Philip Compton¹; Eugen Damoc³; Eduard Denisov³; John C. Tran¹; Andreas Wieghaus³; Michael W. Senko²; Stevan R. Horning³; Alexander Makarov³; Neil L. Kelleher¹; ¹Northwestern University, Chicago, IL; ²Thermo Fisher Scientific, San Jose, CA; ³Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany
- WP 091 **Swath MS: A Novel Data Independent Acquisition Method with Sequential Precursor Isolation Windows Allowing Unlimited SRM-like Data Analysis and Quantification**; Ludovic Gillet¹; Pedro Navarro¹; Stephen Tate²; Hannes Röst¹; Ron Bonner²; Ruedi Aebersold¹; ¹IMSB - ETH, Zurich, Switzerland; ²AB SCIEX, Concord, ON
- WP 092 **Highly Selective and Specific High Resolution Accurate Mass Quantification for Drug Discovery to Clinical**; Suma Ramagiri¹; Jeffrey Miller¹; Hesham Ghobarah¹; Mauro Aiello¹; Johnny Cardenas¹; Graham Gibson²; Yuan-Qing Xia³; Ragu Ramanathan³; William Griffith Humphreys³; Timothy Olah⁴; ¹AB SCIEX, Concord, CANADA; ²ABSCIEX, Medford, NJ; ³Bristol-Myers Squibb, Princeton, NJ; ⁴Bristol-Myers Squibb Company, Lawrenceville, NJ
- WP 093 **Analysis of Parabens in Hand Lotion**; David Negrotti; PerkinElmer, Shelton, CT
- WP 094 **Application of LC-Direct-EI-MS in *in-vitro* Dermal Absorption Study: Quantitative Determination of trans-Cinnamaldehyde**; Achille Cappiello¹; Giorgio Famiglini¹; Pierangela Palma¹; Veronica Termopoli¹; Helga Trufelli¹; Raniero Zazzeroni²; Sandrine Jacquilleot²; Lucia Radici¹; Ouarda Saib²; ¹LC-MS Laboratory, DiSTeVA, University of Urbino, Urbino, Italy; ²Safety & Environmental Assurance Centre, Unilever, Bedford, UK
- LC-MS: SAMPLE PREPARATION; 095 - 105**
- WP 095 **UPLC-MS/MS Analysis of Bimatoprost and Its Free Acid Metabolite from Minipig Skin**; Lisa Ford¹; Kevin Wilkinson²; Mike Allen¹; Lisa Borbridge³; ¹Tandem Labs, Durham, NC; ²Enthalpy Analytical, Durham, NC; ³Allergan, Irvine, CA
- WP 096 **Solvent-free Sample Preparation for LC-MS/MS Confirmatory Analysis of Veterinary Drugs in Equine Urine Matrix**; Tania Possi-Pezzali; Alejandra Rodriguez; Universidad de la Republica, Pando, Uruguay
- WP 097 **LC-MS/MS Method for Determination of Total Active Gentamicin in Brown Norway Rat Lung Tissue**; Xiaodong Zhu; Melvin Tan; Anders Ljungqvist; Gregory Poch; Mike Sullivan; Orlando Espinosa; Ravi Orugunt; Edward Wells; Steve Unger; Worldwide Clinical Trials, Austin, TX
- WP 098 **Simultaneous Quantification of 8 Bioactive Polyphenolic Compounds in EDTA Rat Plasma by a High Throughput LC-MS/MS Method**; David Gingrich¹; Hong Zhou¹; Xiaochuan Li¹; Kim B. Plath¹; Uwe Christians^{1,3}; Isaac Cohen²; Yan Ling Zhang^{1,3}; ¹Bionovo, Aurora, CO; ²Bionovo, Inc, Emeryville, CA; ³University of Colorado HSC, Denver, CO
- WP 099 **PEG Precipitation of Abundant Proteins in Extracting PEGylated Recombinant Human Erythropoietin from Equine Plasma**; Fuyu Guan¹; Cornelius Uboh²; Lawrence Soma¹; George Maylin³; Zibin Jiang¹; Jinwen Chen¹; ¹University of Pennsylvania, Kennett Square, PA; ²PA Equine Toxicology and Research Center, West Chester, PA; ³Cornell University, Ithaca, NY
- WP 100 **Application of Supported Liquid Extraction for Response Normalization of Hemolyzed Bioanalytical Samples in LC-MS/MS Analysis**; Jim Shen; Xianrong Wei; Jennifer Cunliffe; Merck Research Laboratories, Summit, NJ
- WP 101 **Development and Validation of a High Throughput Method for the Determination of Atorvastatin and its Hydroxy-metabolites in Human Plasma**; David J Browne; Mohammed Abrar; Pratap Davuluri; Jeremy Cook; Unilabs YBS, York, UK
- WP 102 **Biological Sample Cleanup using Phospholipids Removal Tips on the Hamilton Microlab STAR**; Jie Zhang¹; David Ayres¹; Xiaoning Lu²; Harold T Smith¹; Francis LS Tse¹; ¹Novartis Institutes for BioMedical Research, East Hanover, NJ; ²Supelco Division of Sigma-Aldrich Corp., Bellefonte, PA
- WP 103 **Using a Unique Approach to Sample Preparation to Increase the Selectivity of an LC/MS/MS Assay for Ethinylestradiol**; Jessalynn Wheaton; Erin Chambers; Diane Diehl; Waters Corporation, Milford, MA
- WP 104 **Multi-function Impurity Adsorption SPE (MAS), a Novel Sample Preparation Device**

PERSONAL CARE PRODUCTS; 093 - 094

- for Improved Phospholipid Removal in Bioanalysis Assays for Zwitterionic Analytes;** Qihui Ni; Wan Wang; Jerry Wang; *Bonna-Agela Technologies, Inc., Wilmington, DE*
- WP 105 **Errors in Bioanalysis Due to Phospholipids - Definitive Measurement, Mechanism, and Management;** Russell Grant; Brian Rappold; Matthew Crawford; Patricia Holland; *Labcorp, Burlington, NC*
- SMALL MOLECULE – QUALITATIVE ANALYSIS; 106 - 125**
- WP 106 **Magnetic NTA -Based Affinity Mass Spectrometry for Rapid Detection of Indigenous Porphyrins;** Fu-Lien Huang; *National Taiwan University, Taipei, Taiwan*
- WP 107 **Utilization of Fine Isotope Structures to Facilitate Unknown Identification Based on High Mass Accuracy and High Spectral Accuracy;** Ming Gu^{1,2}; Yongdong Wang^{1,2}; Hongliang (Leo) Xu^{1,2}; ¹Cerno Bioscience, Yardley, PA; ²Cerno Bioscience, Danbury, CT
- WP 108 **Comprehensive Study of the Steroidal Saponins from Fenugreek Seeds Using Non-targeted Sample Profiling Strategy by UPLC/oaTOF MS^E;** Liping Kang¹; Pang Xu¹; Kate Yu²; Heshui Yu¹; Yang Zhao¹; Chenqi Xiong¹; Dawi Tan¹; Yue Gao¹; Feng Wang³; Alan Millar²; Baiping Ma¹; ¹Beijing Institute of Radiation Medicine, Beijing, China; ²Waters Corporation, Milford, MA; ³Waters China Ltd, Shanghai, China
- WP 109 **The Addition of 'Prototype Biotransformations' to a Knowledge-based Software Program to Speed up the Elucidation of Uncommon Metabolites;** Sian Ives; Ernest Murray; M. Ash Ali; Catherine O'Leary-Steele; *Lhasa Limited, Leeds, UK*
- WP 110 **"Meta Effect" in Fragmentation of Gaseous Ions Derived from Substituted Benzene Derivatives;** Athula B. Attygalle; Upul Nishshanka; Carl S. Weisbecker; *Stevens Institute of Technology, Hoboken, NJ*
- WP 111 **Mass Spectral Characterization of Antioxidant Additives in Copolymers and Lubricants;** David Aaserud²; Christina Jasieczek Mastromatteo¹; Michael J. Polce¹; ¹Lubrizol Advanced Materials, Brecksville, OH; ²The Lubrizol Corporation, Wickliffe, OH
- WP 112 **Identification of Fatty Acids as Microsomal Degradation By-Products in the Presence and Absence of Bovine Serum Albumin by using CAD/ESI/MS/MS;** Jennifer Bushee; Guiqing Liang; Upendra Argikar; Shawn Harriman; *Novartis Institute of Biomedical Research, Cambridge, MA*
- WP 113 **LC-ESI-MS/MS Study of Sulfate-Conjugated Steroid Estrogens: Focusing on Identification and Simultaneous Analysis of Isomers;** Sergiu P. Palii; Margaret O. James; Sriram Ambadapadi; *University of Florida, Gainesville, FL*
- WP 114 **Confirmation of the Identity of a Previously Unknown Alkaloid of Commercial Significance by EI and Other Mass Spectral Techniques;** O. David Sparkman¹; Patrick R. Jones¹; Matthew Curtis¹; Manali Aggrawal¹; Liang Xue¹; Christine Vandervoort²; ¹University of the Pacific, Stockton, CA; ²Michigan State University, East Lansing, MI
- WP 115 **Showing the Mechanism of Forming Unexpected Fragment Ions by Secondary and Tertiary Aliphatic Alcohols that Were Subjected to Electron Ionization;** Patrick Batoon; Patrick R. Jones; Matthew Curtis; O. David Sparkman; *University of the Pacific, Stockton, CA*
- WP 116 **Targeted and Non-targeted Approaches Using High-Resolution Accurate-Mass LC MS-MS to Characterize Pharmaceutical Stability in Various Excipients;** Stephen Rumbelow¹; Keith Goodman²; Johnnie Brown²; Jeff Miller²; ¹Croda Inc, New Castle, DE; ²AB SCIEX, Framingham, MA
- WP 117 **Detection of the Kappa Opioid Receptor (KOR) Antagonists in Mouse Brain Weeks after Administration using LC-MS/MS;** Kshitij A Patkar; Michelle Ganno-Sherwood; Nicolette Ross; Jay McLaughlin; Harminder Singh; *Torrey Pines Institute for Molecular Studies, Port St. Lucie, FL*
- WP 118 **An Evaluation of Strategies for Small-Molecule Analysis by MALDI Mass Spectrometry: What Are the Limits?;** Christopher C. Lai¹; Qian Sun¹; Lawrence R. Phillips²; James A. Kelley¹; ¹Chemical Biology Laboratory, CCR, NCI, NIH, Frederick, MD; ²Biological Testing Branch, DTP, NCI, NIH, Frederick, MD
- WP 119 **Utilization of Tandem Mass Spectrometry, High Resolution Mass Spectrometry, and Synthetic Design for Identification of Unusual Degradant in Hydromorphone Formulation;** Sam Molesworth; Daniel Stegner; Christopher McGinley; Todd Schwier; Esther Hwang; *Hospira, Wichita, KS*
- WP 120 **Infusion Based Selective Detection of Metabolites using Chemical Effect and Differential Ion Mobility (DMS);** Mauro Aiello¹; J.C. Yves Leblanc¹; Doina Caraiman²; Brad Schneider¹; J. Larry Campbell¹; ¹AB SCIEX, Concord, ON; ²AB/SCIEX, Concord, ON
- WP 121 **Live Single-Cell Mass Spectrometry for Detection of Bioactive Substances in a Radish Sprout;** Shuichi Matsuda; Naohiro Tsuyama; Hajime Mizuno; Takanori Harada; Tsutomu Masujima; *Hiroshima Univ. Grad. Sch. Biomed. Sci, Hiroshima, Japan*
- WP 122 **Capillary Electrophoresis Coupled to Time-of-Flight Mass Spectrometry for Fingerprint Study of Bio-Active Alkaloids from Traditional Chinese Medicines;** Zheng-Xiang Zhang; Tao Bo; Jianqiu Mi; *Agilent Technologies (China), Beijing, China*
- WP 123 **Discovery and Lead Structure Optimization of a Non-Secosteroid Binding Partner for the Vitamin D Receptor;** Jerry White¹; Mark Cushman²; Richard B. van Breemen¹; ¹University of Illinois, Chicago, IL; ²Purdue University, West Lafayette, IN
- WP 124 **The Comparison of SCFA Levels in Hamsters Infected with Clostridium Difficile using Atmospheric Pressure Gas Chromatography (APGC) Mass Spectrometry;** Gillian Douce¹; Janice Spencer¹; Anthony Buckley¹; Leonard Dillon²; David Douce²; ¹Glasgow University, Glasgow, UK; ²Waters (MS Technologies), Manchester, UK
- WP 125 **Calibration Method for Creating Inter-instrumental and Inter-laboratory Spectral Databank;** Farid Ichou¹; Denis Lesage¹; Xavier Machuron-Mandard²; Christophe Junot³; Jean-

Claude Tabet¹; ¹UPMC - IPCM - CSOB, Paris, France; ²CEA, DAM, DIF, F-91297 Arpagon, France; ³CEA, DSV/IBITec-SPI/LEMM, F-91191 Gif sur Yvette, France

SMALL MOLECULE – QUANTITATIVE ANALYSIS; 126 - 154

- WP 126 **Determination of Free and Total Doxorubicin and Doxorubicinol in Human Plasma by HPLC-MS/MS;** Xi Chen; Jiongwei Pan; Bibo Xu; *Primera Analytical Solutions Corp., Princeton, NJ*
- WP 127 **A Simple and Reliable Method for Simultaneous Quantification of Antiepileptic Drugs in Plasma using LC-MS/MS Combined with Direct Injection Column;** Kwang Youl Kim; Cheol Woo Kim; Ju Hee Kang; Moon Suk Nam; *Inha University Hospital Clinical Trial Center, In-Cheon, South Korea*
- WP 128 **Development of an LC-MS/MS Based Biochemical Assay to Evaluate Isoprenylcysteine Carboxyl Methyltransferase (ICMT) as a Cancer Target;** Patrick Bingham; *Pfizer, San Diego, CA*
- WP 129 **Ultrasensitive Method for Urinary Lignans Analysis in a Unsupplemented Population;** Kimberly Clark¹; Joshua Prey¹; Gerald Fetterly¹; Lilian Thompson²; Chi-Chen Hong¹; Swati Kulkarni¹; Susan McCann¹; ¹Roswell Park Cancer Institute, Buffalo, NY; ²University of Toronto, Toronto, Canada
- WP 130 **Ultrasensitive Quantitation of the EGFR Inhibitor, Erlotinib and its Active Metabolite OSI-420 Using LC/MS/MS;** Joshua Prey; Kimberly Clark; Gerald Fetterly; *Roswell Park Cancer Institute, Buffalo, NY*
- WP 131 **LC/MS/MS Method for the Quantitative Determination of Kevetrin in Dog Plasma;** Joseph Pav¹; Sylvia Holden²; Krishan Menon²; ¹Toxikon, Bedford, MA; ²Cellceutix Pharmaceuticals, Beverly, MA
- WP 132 **Quantitative Analysis of Formoterol in Human Plasma by Liquid Chromatography-Electrospray Ionization Tandem Mass Spectrometry;** Chang Hun Park; *Severance Hospital, Seoul, South Korea*
- WP 133 **A New Method of Assay of Ketosteroids in Plasma Based on UHPLC-MSMS and Microwave Derivatization;** Leonardo Di Donna; Benabdelkamel Hicham; Fabio Mazzotti; Anna Napoli; Donatella Aiello; Giovanni Sindona; *Università della Calabria, Dipartimento di Chimica, Arcavacata Di Rende, Italy*
- WP 134 **Endogenous Compound Analysis: Measurement of Cytidine Level in Rodent;** Angela Shen; *Agilux Laboratories, Worcester, MA*
- WP 135 **A Rapid LC-MS/MS Alternative to the Isotope Dilution GC-MS NIST Reference Measurement Procedure for Determining Glucose in Human Plasma;** Brian Beato¹; Michael Pugh¹; David Hulbert²; ¹AIT Bioscience, Indianapolis, IN; ²Roche Diagnostics, Indianapolis, IN
- WP 136 **Evaluation of Matrix Effects from Urine for Estrogen Metabolites using HILIC Coupled with ESI-MS;** Heather Tipples; Hien Nguyen; Kevin Schug; *University of Texas at Arlington, Arlington, TX*
- WP 137 **Dry Blood Spot Sampling Technology Evaluated for LDTD-MS/MS Analysis;** Patrice Tremblay; Serge Auger; Pierre Picard; *Phytronix Technologies, Quebec, Canada*

- WP 138 **A New Data Review Software Application and Multiple LC Columns Increase Throughput with High Resolution Accurate Mass Spectrometry;** Keeley Murphy; Paul Palma; Nick Duczak; Jim Kapron; *Thermo Fisher, San Jose, CA*
- WP 139 **Two Dimensional PPE/SPE Extraction Coupled With Three Dimensional HPLC/UPLC/MS/MS For A 500 fg/mL LLOQ Assay;** Troy Voelker¹; Lin Tan¹; Andrew Acheampong²; John Ling²; Gabriella Szekely-Klepser²; Min Meng¹; ¹Tandem Labs, Salt Lake City, UT; ²Allergan Pharmaceuticals, Irvine, CA
- WP 140 **Method Development and Validation of 6-Sulfatoxymelatonin (aMT6s) Quantitation in Human Urine;** Rachel Sun; Jordan Nally; *BASI, West Lafayette, IN*
- WP 141 **Overcoming Glass Vial Adsorption Effects for Trace Analysis of Basic Compounds by LC/MS/MS;** Jeremy Shia; Jane Xu; Brian Murphy; Erin E. Chambers; *Waters Corporation, Milford, MA*
- WP 142 **Fundamental Characteristics of Small Molecule Analysis using Ultra Low Dynamic Flow;** Ben Ngo¹; Shaoxia Yu²; Mike S. Lee³; Jing-Tao Wu²; Gary Valaskovic¹; ¹New Objective, Inc., Woburn, MA; ²Millennium Pharmaceuticals, Inc., Cambridge, MA; ³Milestone Development Services, Newtown, PA
- WP 143 **Application of DBS to the Pharmacokinetic Evaluation of Compounds with Various Blood to Plasma Ratios Using LC-MS/MS;** Ruta Phadnis; Earl Moore; Roger pham; Tom Huang; Mary Wells; Christopher James; Timothy Carlson; Guifen Xu; *Amgen, South San Francisco, CA*
- WP 144 **LDTD-MS/MS in GLP Environment : What Should be Done ?;** Jean Lacoursière; Patrice Tremblay; Serge Auger; Pierre Picard; *Phytronix Technologies, Québec, Canada*
- WP 145 **Determination of Chlorpyrifos and Its Metabolites in Cell Media using Liquid Chromatography/Electrospray Ionization Tandem Mass Spectrometry;** Feng Liang¹; Alvin Terry²; Michael G. Bartlett¹; ¹University of Georgia, Athens, GA; ²Medical College of Georgia, Augusta, GA
- WP 146 **A Robust and Selective Method for Two Omega-3 Fatty Acids (Eicosapentanoic Acid and Docosahexanoic Acid) in Several Matrix Species;** Guy Havard¹; Nathalie Pelletier¹; Sylvain Lachance¹; Nadine Boudreau¹; Ann Lévesque¹; Farhad Amiri²; Bruno Battistini²; Tina Sampalis²; ¹PharmaNet Canada, Québec, Canada; ²Acaci Pharma Inc., Laval, Canada
- WP 147 **Quantitative Analysis of Phytosterols in Cocoa and Vegetable Oils Using Liquid Chromatography-tandem Mass Spectrometry;** Shunyan Mo¹; Linlin Dong¹; W. Jeffrey Hurst²; Richard B. Van Breemen¹; ¹University of Illinois College of Pharmacy, Chicago, IL; ²The Hershey Company, Hershey, PA
- WP 148 **Simultaneous Multi-Mycotoxin Quantification in Feed Samples using Three Isotopically Labeled Internal Standards ([¹³C15] Deoxynivalenol, [¹³C17] Aflatoxin B1, and [¹³C18] Zearalenone);** Lewis C Jackson; *Alltech, Lexington, KY*
- WP 149 **Quantification of Dihydropyridine Calcium Channel Blocker A by High-performance Liquid Chromatography Coupled to Mass**

- Spectrometry; Anita Eberl¹; Anton Mautner¹; Elisabeth Pritz¹; Christoph Magnes¹; Thomas R. Pieber^{1,2}; Frank M. Sinner^{1,2}; ¹Joanneum Research, Graz, Austria; ²Medical University of Graz, Graz, Austria**
- WP 150 **Low pg/ml Detection of Underivatized 17 β -Estradiol in Serum through Increased Ion Sampling Efficiency using LC/MS; Anabel Fandino; Agilent Technologies, Santa Clara, CA**
- WP 151 **High Precision LC-MS/MS Using Nanoelectrospray Ionization Combined with Full-Scan Accurate Mass Spectrometry; Gary A. Schultz¹; Jack D. Henion¹; Steve Lowes²; ¹Advion BioServices, Inc., Ithaca, NY; ²Advion BioSciences, Inc., Ithaca, NY**
- WP 152 **Quantitative Analysis of Bisphenol A in Rat Serum by LC-MS-MS; Yang Yuan¹; Xi Qiu¹; Yanan Yang²; Richard B. van Breemen¹; ¹University of Illinois College of Pharmacy, Chicago, IL; ²Agilent Technologies, Inc, Santa Clara, CA**
- WP 153 **Ionization Suppression and Charge State Shifting from Biological Matrices during Electrospray Ionization; Richard Wong¹; Baomin Xin¹; Timothy Olah²; ¹Bristol-Myers Squibb, Pennington, NJ; ²Bristol-Myers Squibb Company, Lawrenceville, NJ**
- WP 154 **Determination of Urinary Creatine and Guanidinoacetate by Hydrophilic Interaction Liquid Chromatography and Tandem Mass Spectrometry; Marlene F. Madeira¹; Karina Helena M. Cardozo¹; Fernando Kok²; Valdemir M. Carvalho¹; ¹Fleury Group, São Paulo, Brazil; ²School of Medicine, University of São Paulo, São Paulo, Brazil**
- DIAGNOSTIC CLINICAL CHEMISTRY II; 155 - 171**
- WP 155 **Immobilized Liquids for Simple and Rapid Preparation of Clinical Samples for Quantification by LC-MS/MS; Michal Svoboda¹; Robert Wohleb²; Michael Vogeser³; Roland Geyer¹; ¹TECAN AG, Maennedorf, Switzerland; ²ILE Inc., Ferndale, CA; ³University Hospital Munich, Munich, Germany**
- WP 156 **Comparison between a High Resolution Exactive and a Triple Quadrupole MS for Quantitative Analyses of Drugs and Clinical Biomarkers; Bertrand Rochat¹; Hamid Reza Sobhi¹; Olaf Scheibner²; Maciej Bromirski²; Hugues Henry¹; ¹CHUV-UNIL, Lausanne, Switzerland; ²Thermo Fisher Scientific, Bremen, Germany**
- WP 157 **Development of a Semi-quantitative, High-throughput Method for Simultaneous Detection of Commonly Prescribed Cardiovascular Drugs in Hospitalized Patients; Eduardo Dias; Usha Menon; Dan Roden; Nancy Brown; Richard M. Caprioli; Vanderbilt Univ Sch of Med, Nashville, TN**
- WP 158 **Quantification of Topiramate by Liquid Chromatography and Tandem Mass Spectrometry; Karina Helena M Cardozo; Valdemir M Carvalho; Fleury Group, São Paulo, Brazil**
- WP 159 **Revealing the Influence of Possible Endogenous and Exogenous Interferences on HPLC-MS/MS Based Quantification of THC and THC-COOH in Oral Fluid; Caroline Bylda; Andreas Leinenbach; Roland Thiele; Roche Diagnostics GmbH, Penzberg, Germany**
- WP 160 **High-Throughput Analysis of Tacrolimus in Whole Blood Using Ultra-fast SPE-MS/MS; Kari E. Schlicht¹; Eric W. Korman²; Vaughn P. Miller¹; Christine L. Snozek²; Frank W. Crow²; Loralie J. Langman²; William A. Lamarr¹; ¹BIOCIUS Life Sciences Inc., Wakefield, MA; ²Mayo Clinic, Rochester, MN**
- WP 161 **High-Throughput Analysis of Levetiracetam in Serum Using Ultra-fast SPE-MS/MS; Michelle Romm¹; Eric Korman²; Vaughn Miller¹; Christine Snozek²; Frank W. Crow²; Loralie Langman²; William A. Lamarr¹; ¹BIOCIUS Life Sciences, Inc., Wakefield, MA; ²Mayo Clinic, Rochester, MN**
- WP 162 **Ultra-fast Analysis of Benzodiazepenes in Human Urine using Dilute and Shoot Methodology and SPE-MS/MS; Lauren Frick; Michelle Romm; Vaughn Miller; William A. Lamarr; BIOCIUS Life Sciences, Inc., Wakefield, MA**
- WP 163 **Simultaneous Quantitation of Insulin-like Growth factor-I and II in Human Serum Using Liquid Chromatography High Resolution Mass Spectrometry; Shijun Sheng; Cory Bystrom; Richard Reitz; Nigel Clarke; Quest Diagnostics, San Juan Capistrano, CA**
- WP 164 **Multiplexed SRM (selected-reaction-monitoring) of formalin-fixed-paraffin-embedded (FFPE) Samples from Clinical Trial Patient Biopsies; Sheeno Thyparambil¹; Wei-Li Liao¹; David Krizman¹; Marlene M. Darfler¹; Bharat Jasani²; Richard Adams²; Todd Hembrough¹; Jon Burrows¹; ¹Expression Pathology Inc., Rockville, MD; ²Cardiff University, Cardiff, UK**
- WP 165 **Identification and Characterization of Hemoglobinopathies Using Automated Mass Spectrometry Methods in Clinical Applications; Frank W. Crow¹; Patricia Wendt¹; Swanson Kenneth¹; Ryan Morse¹; Jennifer Oliveira¹; James Hoyer¹; Jose Meza²; ¹Mayo Clinic, Rochester, MN; ²Agilent Technologies, Santa Clara, CA**
- WP 166 **Quantification of IgG Immunoglobulin Subclasses by LC-MS/MS; David Barnidge; Robin Karras; David Murray; Mayo Clinic / DLMP, Rochester, MN**
- WP 167 **Direct MALDI-TOF Mass Analysis of Histopathological Sections with Imaging Mass Spectrometry Convolution Software; Ikuko Yao¹; Masanori Yamada¹; Kurando Hosaka¹; Takahiro Hayasaka²; Masaru Ushijima³; Masaaki Matsuura³; Mitsutoshi Setou²; Seiji Ito¹; ¹Kansai Medical University, Osaka, Japan; ²Hamamatsu University School of Medicine, Shizuoka, Japan; ³Genome Center of JFCR, Tokyo, Japan**
- WP 168 **Multiplexing Two HPLCs Analyses to a Dual Coaxial Flow Ion Source to Decrease LCMS Method Development Time in Clinical Applications; Sha Joshua Ye; Ellie Majdi; Dragan Vuckovic; George Scott; Ionics Mass Spectrometry Gr, Bolton, Canada**
- WP 169 **Optimising Direct Surface Sampling MS/MS of Dried Blood Spots for Haemoglobin Variant Analysis; Rebecca Edwards¹; Paul Griffiths²; Josephine Bunch³; Helen Cooper¹; ¹School of Biosciences, University of Birmingham,**

- Birmingham, UK; ²Clinical Chemistry, Birmingham Children's Hospital, Birmingham, UK; ³School of Chemistry, University of Birmingham, Birmingham, UK
- WP 170 **Real Time Analysis of Living Animals by Electrospray Ionization Mass Spectrometry using Solid Needle as Sampling Probe;** Kentaro Yoshimura; *University of Yamanashi, Yamanashi, Japan*
- WP 171 **Fast Polarity Switching and MRM Triggered Automatic MS/MS Applied to Benzodiazepines and Their Metabolites in Clinical and Forensic Analysis;** Toshikazu Minohata¹; Natsuyo Asano¹; Kiyomi Arakawa¹; Jun Watanabe¹; Junko Iida¹; Hitoshi Tsuchihashi²; Koichi Suzuki²; Kei Zaitzu³; Noriaki Shima³; Munehiro Katagi³; ¹Shimadzu Corporation, Kyoto, Japan; ²Dep. of Legal Medicine, Osaka Medical College, Takatsuki, Japan; ³Forensic Science Lab, Osaka Prefectural Police, Osaka, Japan
- NUCLEIC ACIDS II; 172 - 192**
- WP 172 **Cyclic Nucleotide Modulation May Point to Compensatory Mechanisms in the Purine Pathway;** Matthew Blatnik; Mary Lame; *Pfizer Inc., Groton, CT*
- WP 173 **Top-Down Mass Spectrometry of tRNA Reveals Sample Heterogeneity and Identifies/Localizes Posttranscriptional Modifications;** Monika Taucher; Barbara Ganisl; Kathrin Breuker; *University of Innsbruck, Innsbruck, Austria*
- WP 174 **Tandem Mass Spectrometry of Unplatinated- and Platinated DNA Quadruplexes;** Silvan, R. Stucki; Adrien Nyakas; Stefan Schuerch; *University of Bern, Bern, Switzerland*
- WP 175 **Investigation of DNA Binding Affinities and Sequence Selectivities of Threading Tetraintercalator using Photodissociation MS/MS;** Catherine Silvestri; Jennifer Brodbelt; Garren Holtman; Brent Iverson; *University of Texas, Austin, TX*
- WP 176 **LC-MS Analysis of Therapeutic siRNA in Mouse Liver;** Guodong Li; David Crowe; Mike Beverly; *Novartis Institutes for Biomedical Research, Cambridge, MA*
- WP 177 **Immobilized RNases for the Analysis of Transfer RNAs (tRNAs) by Mass Spectrometry;** Annika Butterer; Maggy Zorc; Patrick A. Limbach; *University of Cincinnati, Cincinnati, OH*
- WP 178 **Collision-Induced Dissociation of Modified RNA Models in Positive and Negative Mode;** Yang Gao; *Purdue University, West Lafayette, IN*
- WP 179 **Mass Spectrometry-based Characterization of RNAs and Proteins in Functional Cellular Ribonucleoprotein Complexes;** Masato Taoka¹; Shunpei Masaki^{1, 2}; Hiroshi Nakayama^{2, 3}; Yoshio Yamauchi¹; Toshiaki Isobe^{1, 2}; ¹Department of Chemistry, Tokyo Metropolitan Univ., Tokyo, Japan; ²CREST, Tokyo, Japan; ³RIKEN Advanced Science Institute, Wako, Saitama, Japan
- WP 180 **Mass Spectrometry-based Shotgun Identification of Multiple RNAs in Functional Ribonucleoprotein Complexes;** Hiroshi Nakayama^{1, 2}; Yoshio Yamauchi³; Masato Taoka³; Yuko Nobe^{2, 3}; Nobuhiro Takahashi^{2, 4}; Toshiaki Isobe^{2, 3}; ¹RIKEN Advanced Science Institute, Wako, Japan; ²CREST, JST, Tokyo, Japan; ³Tokyo Metropolitan University, Tokyo, Japan; ⁴Tokyo University of Agriculture and Technology, Tokyo, Japan
- WP 181 **Mass Spectrometric Method Development for the Analysis of Conjugated siRNA;** Ann O'Brien; *Merck Co Inc, West Point, PA*
- WP 182 **Sequence Confirmation of Phosphorothioate Containing siRNAs by Chemical and Enzymatic Digestion and LC-MS;** Fanyu Meng; Jiong Yang; Mark Levorse; Huimin Yuan; Bing Mao; *Merck & Co., Inc, Rahway, NJ*
- WP 183 **Evaluation of Stability of Thiophosphoryl Analogs of Thrombin Binding Aptamer;** Galina E. Pozmogova; Igor P. Smirnov; *Institute of Physico-Chemical Medicine, Moscow, Russian Federation*
- WP 184 **Determination of Transfection Efficiency of Pooled siRNA in Cancer Cells;** A. Cary McGinnis; Michael G. Bartlett; *University of Georgia, Athens, GA*
- WP 185 **Detection of Modified Ribonucleotides from Native RNA using Negative Ion Mode ESI-MS Coupled to Nanobore Ion Pair Reagent LC;** Florian Martin Richter; Valentina Perrera; Thomas Jenuwein; Gerhard Mittler; *Max Planck Institute of Immunobiology & Epigenetics, Freiburg / Breisgau, Germany*
- WP 186 **Study of Fragmentation of RNA Nucleotides and DNA Oligonucleotides in a Direct Analysis in Real Time Mass Spectrometer;** Liang Xue; Matthew Curtis; Manali Aggrawal; Priyanka Chitranshi; O. David Sparkman; Patrick R. Jones; *University of the Pacific, Stockton, CA*
- WP 187 **Investigating Nucleic Acid Complexes with Small Molecule Ligands by Ion Mobility Spectrometry Mass Spectrometry;** Maria Basanta Sanchez; John B. Mangrum; Papa Nii Asare-Okai; Daniele Fabris; *The RNA Institute, University at Albany, Albany, NY*
- WP 188 **From EDD of Oligonucleotides to EID of Mononucleotides;** Viet Hung Nguyen; Carlos Afonso; Jean-Claude Tabet; *Université Paris 6/UMR7201, Paris, France*
- WP 189 **Electrochemical Simulation of Covalent DNA Adduct Formation Monitored with Liquid Chromatography/Mass Spectrometry;** Herbert Oberacher¹; Robert Erb¹; Sabine Plattner¹; Jean-Pierre Chervet²; ¹Innsbruck Medical University, Innsbruck, Austria; ²Antec, Zoeterwoude, Netherlands
- WP 190 **A Study of the Dehalogenation Products of Brominated- and Iodated-DNA Upon UVA and UVB Exposure Using Mass Spectrometry and HPLC;** Renee Williams; *UC Riverside, Riverside, CA*
- WP 191 **Gas-phase Reactivity of Aromatic Carbon-centered σ,σ -Biradicals towards Oligonucleotides of Differing Lengths;** Fanny Widjaja¹; Zhicheng Jin²; John Nash¹; Hilikka Kenttamaa¹; ¹Purdue University, West Lafayette, IN; ²Johns Hopkins University, Baltimore, MD
- WP 192 **The Dependency of Photo-dissociation Rate of 5-bromouridine on DNA Conformation;** Igor P. Smirnov; Galina E. Pozmogova; *Institute of Physico-Chemical Medicine, Moscow, Russian Federation*

FORENSICS: GENERAL; 193 - 214

- WP 193 **GCxGC-MS Mapping of Human Volatiles;** Brian Eckenrode¹; Christopher Tipple¹; Patricia Caldwell²; Lauryn DeGreeff²; Nishan Dulgerian³; Rex Stockham³; ¹Federal Bureau of Investigation, Quantico, VA; ²Oak Ridge Institute for Science and Education, Quantico, VA; ³FBI Evidence Response Team Unit, Quantico, VA
- WP 194 **An Inter-Donor Variability Study of the Peptides and Small Proteins Present in Latent Fingerprints;** Leesa Ferguson; Rosalind Wolstenholme; Robert Bradshaw; Vikki Carolan; Malcolm Clench; Simona Francese; Sheffield Hallam University, Sheffield, UK
- WP 195 **Mass Spectrometric Imaging of Latent Finger Prints and their Sub-Structure;** Alexander Beinsen; Bernd Abel; Ostwald-Institute for Physical Chemistry, Leipzig, Germany
- WP 196 **Human Y-STR Profiling Using Fully-Automated Electrospray Ionization Time of Flight Mass Spectrometry;** Kristen Boles; Maria Tobar; David Duncan; Steven Hofstadler; Thomas Hall; Ibis Biosciences subsidiary of Abbott Molecular, Carlsbad, CA
- WP 197 **Development of a MALDI MSI Based Methodology for the Identification of Sexual Assault Suspects;** Robert Bradshaw²; Rosalind Wolstenholme¹; Leesa Ferguson¹; Malcolm Clench¹; Robert Blackledge³; Simona Francese¹; ¹Sheffield Hallam University, Sheffield, UK; ²formerly of Sheffield Hallam University, Sheffield, UK; ³Formerly of the U.S. NCISRF Laboratory, San Diego, CA
- WP 198 **Analysis of Bile Acids in Bear Bile Products by Liquid Chromatography-Ion Trap Mass Spectrometry;** Su-Hui Huang; Investigation Bureau, Ministry of Justice, New Taipei City, Taiwan
- WP 199 **Characterization of Vehicle Paints Containing Polystyrene using pyrolysis-GC/MS for Forensic Applications;** Sheng-Hsiung Yang; Jeremiah Y. Shen; Matt S. Chang; Gaston J. Wu; Chemistry Dept., National Taiwan Normal University, Taipei, Taiwan
- WP 200 **International Effort to Monitor Toy Safety Using Inexpensive Dual Use Military/Civilian Wear Sensors Incorporating DART Mass Spectral Dyes;** Ronny Robbins¹; James McCarty M.D.²; ¹US Army, Gunpowder, MD; ²Springs of Grace Church, Mogoñé, Mexico
- WP 201 **Guidelines for Minimal Destructive Forensic Examination of Inkjet Printer Documents with (MA)LDI Mass Spectrometry and Raman Spectroscopy;** Laetitia Heudt¹; Delphine Debois¹; Laurent Kohler²; Franck Partouche³; Bernard Gilbert¹; Edwin De Pauw¹; ¹University of Liege, Liège, Belgium; ²National Institute Criminalistics and Criminology, Brussels, Belgium; ³Criminal Investigation Dpt of National Gendarmerie, Rosny Sous Bois, France
- WP 202 **Analysis of Dyes from Ballpoint Pen Ink on Paper Using Atmospheric Pressure Solids Analysis Probe and Laserspray Ionization Mass Spectrometry;** Tam Lieu; Charles McEwen; University of the Sciences, Philadelphia, PA
- WP 203 **Rapid Dating of Silk Fabric by CE-MS Analysis of D/L Amino Acids;** Kathryn Klauenberg; Mehdi Moini; Smithsonian Institution, Suitland, MD

- WP 204 **Real Time Thermal Desorption of Airborne Solid Phase Explosive Particulate;** William Stott; Edison Cerda; MSdetection, Bolton, ON, Canada
- WP 205 **Analysis of Ammonium Nitrate/Urea Nitrate with Crown Ether and Sugar as Modifiers;** Chia-Wei Tsai¹; Anthony Midey²; Ching Wu²; Richard A. Yost¹; ¹University of Florida, Gainesville, FL; ²Excellims Corporation, Acton, MA
- WP 206 **Characterization of Cannabinomimetic Compounds in Synthetic Cannabis Products by Gas Chromatography-High Resolution Time of Flight Mass Spectrometry (GC-HRT);** Joe Binkley; Kevin Siek; Cory Fix; Viatcheslav Artsev; LECO Corporation, St. Joseph, MI
- WP 207 **Confirmation of Drugs of Abuse in Pseudo Drug Mixes using UHPLC-ESI TOF MS;** Joshua Wilhide¹; William R. LaCourse¹; Hayley Crowe²; ¹Univeristry of Maryland Baltimore County, Baltimore, MD; ²Perkin Elmer, Waltham, MA
- WP 208 **Development of a Fast Product & Neutral Loss Scanning Method to detect Designer Drugs that Pass Conventional Screening;** Jeffrey H. Dahl; Robert Classon; Shimadzu Scientific Instruments, Columbia, MD
- WP 209 **Fast and Sensitive Target Compound Quantification and Confirmation with a New Triple Quad Acquisition Function;** Michael Flanagan; Tim Schlabach; Doug McIntyre; Anabel Fandino; Agilent Technologies, Santa Clara, CA
- WP 210 **Detection of Flunitrazepam in Alcoholic Beverages via DESI-MS;** Paul D'aloise; Ohio University, Athens, OH
- WP 211 **Determination of the Elemental Composition for Forensic Related Compounds using Low Resolution (GC/MS) and High Resolution Mass Spectrometer (LTQ-Orbitrap);** Eshwar Jagerdeo; Jason E. Schaff; Marc A. LeBeau; FBI Laboratory Chem Unit, Quantico, VA
- WP 212 **Sulfur Counting and Spectral Accuracy Capabilities of the LTQ-FT and the LTQ-Orbitrap for Small Molecule Analysis;** Samantha Blake; Hunter Walker; David C. Muddiman; David Hinks; Keith Beck; North Carolina State University, Raleigh, NC
- WP 213 **Forensic Isotope Ratio Analysis of Human Hair;** Yan An; Glen Jackson; Ohio University, Athens, OH
- WP 214 **Differential Mobility Spectrometry as a Tool to Improve Mass Spectral Library Searching Scores by Removal of Isobaric Interferences;** David J. Lavorato; Adrian Taylor; Michael J. Y. Jarvis; Doina Caraiman; Brad Schneider; J.C. Yves Leblanc; AB SCIEX, Concord, Canada

METABOLOMICS: UNTARGETED PROFILING I;
215 - 236

- WP 215 **Nutraceutical Evaluation of Diverse Green Tea Cultivars on the Basis of Metabolic Profiling;** Yoshinori Fujimura¹; Kana Kurihara²; Megumi Ida²; Reia Kosaka²; Daisuke Miura¹; Hiroyuki Wariishi^{2,3}; Mari Maeda-Yamamoto⁴; Atsushi Nesumi⁴; Takeshi Saito⁵; Tomomasa Kanda⁵; Koji Yamada²; Hirofumi Tachibana^{2,3}; ¹ICMRN, Kyushu University, Fukuoka, Japan; ²Faculty of Agriculture, Kyushu University, Fukuoka, Japan; ³Bio-Architecture Center, Kyushu University, Fukuoka, Japan; ⁴NIVTS, NARO,

- Shimada, Japan; ⁵Asahi Breweries Ltd., Moriya, Japan
- WP 216 **Detection of Metabolic-based Serum Biomarkers for Human Esophageal Cancer using LC-MS;** Jian Zhang¹; Lingyan Liu¹; Siwei Wei¹; G.A.Nagana Gowda¹; Jeremiah Bowers¹; Zane Hammoud²; Daniel Raftery¹; ¹Purdue University, West Lafayette, IN; ²Henry Ford Hospital, Detroit, MI
- WP 217 **Metabolomics Study of the Systemic Signal Transduction in Tomato Wound Response;** Ying-Lan Chen^{1,2}; Yet-Ran Chen¹; ¹ABRC, Academia Sinica, Taipei, Taiwan; ²Institute of Plant Biology, NTU, Taipei, Taiwan
- WP 218 **Liquid Chromatography-Mass Spectrometry (LC-MS) Based Metabolomics Reveals Novel Metabolic Pathways Regulated by PI3 Kinases;** Vinothini Sivarajah; Pedro Cutillas; Barts Cancer Institute, London, UK
- WP 219 **Metabolomics of Phalaenopsis by LC-DAD-MS;** Jen Tse Liang; Chien-Chung Cheng¹; Shan-Te Hsu; Kuo-Lung Ku; National Chiayi University, Chiayi City, Taiwan
- WP 220 **GC-MS-based Comparative Metabolomics Analysis of Pathogenic *Salmonella enterica* serovar Typhimurium Grown under Host Environment Conditions;** Young-Mo Kim¹; Heather M. Brewer¹; Afshan Kidwai²; Qibin Zhang¹; Karl K. Weitz¹; Charles Ansong¹; Richard D. Smith¹; Fred Heffron²; Joshua N. Adkins¹; Thomas O. Metz¹; ¹Pacific Northwest National Laboratory, Richland, WA; ²Oregon Health & Science University, Portland, OR
- WP 221 **High Resolution Profiling of Ginseng Extracts using Triple-Quadrupole-Time-of-Flight Mass Spectrometry Technology;** Xu Guo¹; Eva Duchoslav¹; Edmund Lui²; Hua Pei²; Takeo Sakuma¹; Yun Yun Zou¹; Byung-Hee Shin³; Sung Hoon Yeo³; Daeseung Lee³; Youngchang Kim⁴; Robert Ellis¹; ¹AB SCIEX, Concord, Canada; ²OGIRC, University of Western Ontario, London, Canada; ³AB SCIEX (KOREA), Seoul, Korea; ⁴Ginseng Research Division, NIHHS, RDA, Seoul, Korea
- WP 222 **Wine Country of Origin Classification – Application of a Metabolomics Workflow;** Friedrich Mandel¹; Thomas Glauner¹; Jerry Zweigenbaum²; Ondrej Lacina³; Lukas Vaclavik³; Jana Hajslova³; ¹Agilent Technologies GmbH, Waldbronn, Germany; ²Agilent Technologies, Inc., Wilmington, DE; ³Institute of Chemical Technology, Prague, Czech Republic
- WP 223 **Mass Spectrometry-based Metabolomics for Phenotypic Differentiation between Four Citrus Fruits;** Jun Han^{1,2}; Darryl Hardie^{1,2}; Christoph H. Borchers^{1,2}; ¹University of Victoria-Genome BC Proteomics Centre, Victoria, BC, Canada; ²Department of Biochemistry & Microbiology, University of Victoria, Victoria, BC, Canada
- WP 224 **Evaluation of the Impact of Food and Time-of-Day on Plasma Metabolites in a mouse Model using Liquid Chromatography-Mass Spectrometry (LC-MS);** Joo Ern Ang¹; Alan Henley¹; Victoria Revell²; Debra Skene²; Florence Raynaud¹; ¹Institute of Cancer Research, Sutton, UK; ²University of Surrey, Guildford, UK
- WP 225 **Metabolomic Profiling of Coffees using UHPLC-QTOF LC/MS and Multivariate Analysis Tool;** Akio Hayashi; Hirokazu Sawada; Agilent Technologies, Hachioji, Japan
- WP 226 **A Workflow for Determination of the Elemental Compositions and Metabolic Profiling with FT-ICR MS;** Kazunori Saito¹; Tatsuhiko Nagao²; Daisuke Miura²; Noriyuki Iwasaki¹; Takashi Nirasawa¹; Hiroyuki Wariishi²; ¹Bruker Daltonics K.K., Yokohama, Japan; ²Kyushu University, Fukuoka, Japan
- WP 227 **Characterization of Asthma Phenotypes in Children by Metabolomics Approach with LC-MS on Exhaled Breath Condensate;** Giuseppe Giordano¹; Silvia Carraro¹; Matteo Stocchero³; Fabiano Reniero²; Iole Maria Di Gangi¹; Antonina Gucciardi¹; Paola Pirillo¹; Eugenio Baraldi¹; ¹Pediatrics Department Padova University, Padova, Italy; ²European Commission, JRC, Institute IHCP, ST Unit, Ispra, Italy; ³S-IN Informatic Solutions, Vicenza, Italy
- WP 228 **Non-targeted Metabolomics using Nanospray Mass Spectrometry as a Tool to Understand the Growth of Axillary Buds in Tomato Plants;** Chloe Steels¹; Steve Coates²; Andrew Fleming¹; Mike Burrell¹; ¹The University of Sheffield, Sheffield, UK; ²Advanced Technologies (Cambridge) Limited, Cambridge, UK
- WP 229 **Integrated LC/MS Metabolomic Investigation of Changes in the Rat Serum Metabolite Profile Induced by Acetaminophen;** Jinchun Sun¹; Yosuke Ando^{1,2}; Xi Yang¹; James Greenhaw¹; Laura Schnackenberg¹; Lisa Pence¹; Thomas Schmitt¹; Sudeepa Bhattacharyya¹; Willie Salminen¹; Donna Mendrick¹; Richard Beger¹; ¹NCTR / USFDA, Jefferson, AR; ²Medicinal Safety research Labs, Daiichi Sankyo Co., Tokyo, Japan
- WP 230 **Protein and Metabolite Profiling of Arabidopsis Glutathione S-Transferase Knockout Mutants using LC/MS and Collision Induced Dissociation;** Jiangyin Bao; A. Daniel Jones; Michigan State University, East Lansing, MI
- WP 231 **High-throughput Metabolic Profiling and *in situ* Metabolite Imaging by MALDI Mass Spectrometry;** Daisuke Miura; Daichi Yukihira; Yoshinori Fujimura; Hiroyuki Wariishi; Kyushu University, Fukuoka, Japan
- WP 232 **Defining the Metabolome using GCMS - Quantitation of Compromises Resulting from Temperature Gradient and Scan Rate in Quadrupole Systems;** Catherine Rawlinson¹; Hayley White²; Garth Maker^{1,2}; Bruce Fraser³; Paul Wynne³; John Hewetson³; Robert Trengove^{1,2}; ¹Metabolomics Australia, Murdoch University Node, Perth, Australia; ²Murdoch University, Murdoch, Australia; ³Shimadzu Scientific Instruments (Oceania) Pty Ltd, Melbourne, Australia
- WP 233 **Metabolomic Signature Profiles Indicative of Acute Radiation Exposure;** Catherine E. Petersen; James A Campbell; David L Stenoien; Battelle/ PNNL, Richland, WA
- WP 234 **Analysis of Human Skin Tissue after Exposure to Ionizing Radiation Enabled by GC-MS-based Metabolomics;** Zeping Hu; Young-Mo Kim; William Morgan; Richard D. Smith; Tom

- Metz; Qibin Zhang; *Pacific Northwest National Laboratory, Richland, WA*
- WP 235 **Profiling and Quantitation of Metabolomic "Signatures" for Breast Cancer Cell Progression**; Henry Shion¹; Irwin Kurland³; Sumanta Goswami⁴; Haitao Luo³; Evan Bernier²; David Kusin⁴; Bhavapriya Vaitheesvaran³; Alan Millar¹; ¹*Waters Corp., Milford, MA*; ²*Waters Corporation, Beverly, MA*; ³*Albert Einstein College of Medicine of Yeshiva Un, Bronx, NY*; ⁴*Yeshiva University, New York, NY*
- WP 236 **Comparative Metabolomic Profiling of the Onset and Progression of Spontaneous Ovarian Cancer in the Chicken**; Adam Hawkrig¹; Edward Karoly²; Robert Mohney²; Rebecca Wysocky¹; James Pettite¹; Paul Mozdziak¹; Kenneth Anderson¹; David Muddiman¹; ¹*NC State University, Raleigh, NC*; ²*Metabolon, Inc., Durham, NC*
- DRUG METABOLISM:**
QUANTITATIVE ANALYSIS II; 237 - 260
- WP 237 **Development of a HPLC-MS/MS Assay to Measure the Novel Angiogenesis Inhibitor E-3810 in Plasma. Preliminary Pharmacokinetic Evaluation in Cancer Patients**; Federica Sala¹; Renzo Bagnati¹; Roberta Cereda²; Valeria Livi²; Gabriella Camboni²; Maurizio D'Incalci¹; Massimo Zucchetti¹; ¹*Mario Negri Institute, Milan, Italy*; ²*EOS, Milan, Italy*
- WP 238 **Determination of Sitaxsentan and Bosentan in Human Plasma by LC-MS/MS**; Jerry Cao; Heather Plank; Katherine Lee; Jamie Zhao; Kumar Ramu; *QPS, LLC, Newark, DE*
- WP 239 **Development and Validation of a Highly Sensitive LC-MS/MS Method for Quantifying Sirolimus in Human Whole Blood**; Xiaoping Ao; Hongkun Liang; Venkatraman Junnotula; Yuan-Shek Chen; Kumar Ramu; *QPS, LLC, Newark, DE*
- WP 240 **Metabolism and Pharmacokinetics of Anti-tuberculosis Active coumarin-3-carboxamides with Nonselective CYP450 Inhibitor, 1-aminobenzotriazole**; Kuan-Wei Peng; Yang Song; Nan Zhang; Rajan Giri; Zhiqiang Wang; Valentina Petukhova; Larry Klein; Franzblau Scott; *University of Illinois at Chicago, ITR, Chicago, IL*
- WP 241 **A Sensitive LC-MS/MS Method to Measure 13C10-BMS-790052 and BMS-790052 in Plasma from a Monkey Study for Metabolism Comparison**; Hao Jiang; Wenying Li; Jianing Zeng; Mark E. Arnold; *Bristol-Myers Squibb, Princeton, NJ*
- WP 242 **Reliable Measurement of Endogenous Drug Using True Plasma Matrix—A Case Study for Determination of MethylNicotinamide in Human Plasma Using LC-MS/MS**; Yansheng Liu; Yu-Hui Fu; Moo-Young Kim; Rodney Boughner; Darioush Dadgar; *KCAS, LLC, Shawnee, KS*
- WP 243 **A LC-MS/MS Method for Simultaneous Determination of CYP2A6-mediated Nicotine Metabolites and Analysis of Nicotine-mediated Oxidative Stress in U937 Macrophages**; Ravinder Earla; Mengyao Jin; Ankit Shah; Rajya lakshmi Earla; Raeesa Gupte; Ashim K Mitra; Anil Kumar; Santhosh Kumar; *University of Missouri-Kansas City, Kansas City, MO*
- WP 244 **Identification and Quantification of YH4808 and Metabolites in Human Plasma by Liquid Chromatography- Mass Spectrometry (LC-MS)**; Seul Oh¹; Hyang Hee Yang¹; Young Hun Kim²; Seo Hyun Yoon¹; Kyung-Sang Yu¹; In-Jin Jang¹; Joo-Youn Cho¹; ¹*Seoul National University College of Medicine, Seoul, South Korea*; ²*Innovation 2 Unit, Yuhan Corporation, Seoul, South Korea*
- WP 245 **Identification and Quantification of YH4808 Metabolites in Human Urine by Liquid Chromatography-Mass Spectrometry (LC-MS)**; Won Seok Nam¹; Hyang Hee Yang¹; Young Hun Kim²; Seo Hyun Yoon¹; Kyung-Sang Yu¹; In-Jin Jang¹; Joo-Youn Cho¹; ¹*Seoul National University College of Medicine, Seoul, Republic of Korea*; ²*Innovation 2 Unit, Yuhan Corporation, Seoul, Republic of Korea*
- WP 246 **Quantitative Determination of CKD-516 and Its Metabolite, S-516 in Human Plasma by Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS)**; Hwa Suk Kim; Seo Hyun Yoon; Kyung-Sang Yu; In-Jin Jang; Joo-Youn Cho; *Seoul National University College of Medicine, Seoul, South Korea*
- WP 247 **Simultaneous Determination of Theophylline, Caffeine and their Metabolites in Urine by LC-ESI/MS/MS for Pediatric Pharmacokinetic study**; Young Mi Kim; Sun Hwa Kim; Seo Hyun Yoon; Kyung-Sang Yu; In-Jin Jang; Joo-Youn Cho; *Seoul National University College of Medicine, Seoul, South Korea*
- WP 248 **Pharmacokinetic Characterization of Rosiglitazone and Its Metabolites in Diabetes Animal Model**; Sung-Hoon Ahn; Min-Sun Kim; Jin Sook Song; Myung Ae Bae; *KRICT, Daejeon, South Korea*
- WP 249 **Determination of Low Levels of Testosterone and Dihydrotestosterone in Human Serum by LC-MS/MS**; Chen-Yu Wang; Yan Xu; Kathryn Barnett; Kristin Miller; Yong-Xi Li; *Medpace Bioanalytical Laboratories, Cincinnati, OH*
- WP 250 **Quantitation of Maternal and Fetal Lopinavir Exposure in a Rat Model of Gestational Diabetes by LC-MS/MS**; Gregory J. Anger¹; Michelle E. Young²; Matthew W. Forbes²; Micheline Piquette-Miller¹; ¹*Faculty of Pharmacy, University of Toronto, Toronto, Canada*; ²*Department of Chemistry, University of Toronto, Toronto, Canada*
- WP 251 **Simultaneous Determination of Estrone and Equilin in K₂EDTA Human Plasma by LC-MS/MS**; Ming Zuo²; Qiaoling Yu²; Zhi Liu¹; Jianyao Wang¹; Wenzhe Lu²; Daniel Tang²; Harry Zhao¹; Zhongping (John) Lin¹; ¹*Frontage Laboratories, Malvern, PA*; ²*Frontage Laboratories Inc. (Shanghai), Shanghai, China*
- WP 252 **Use of LC-MS-MS to Assess Induction of Human CYP1A2 and CYP3A4 by Hops**; Xi Qiu; Yang Yuan; Richard B. Van Breemen; *University of Illinois College of Pharmacy, Chicago, IL*
- WP 253 **Determination of 5-Hydroxy Omeprazole and Omeprazole Sulfone in Human Plasma by LC-MS/MS**; Weimin Wang¹; Hsiaoju Lin¹; Wei Zhang¹; Futian Han¹; Harry Zhao¹; Zhongping (John) Lin¹; Mike-Qingtao Huang²; Naidong Weng²; ¹*Frontage Laboratories, Malvern, PA*; ²*Frontage Laboratories, Malvern, PA*

- ²Johnson & Johnson Pharmaceutical R & D, LLC, Raritan, NJ
- WP 254 **The Novel LC-MS/MS Method for Thiosulfate in Human Plasma and Urine;** Yafei Xu¹; Weisheng Lin¹; Jing Ke¹; Harry Zhao¹; Zhongping (John) Lin¹; Helen Usansky²; ¹Frontage Laboratories, Malvern, PA; ²Icaria, Inc., Clinton, NJ
- WP 255 **Quantitative LC/MS/MS Methods for Characterizing Metabolites of Drugs Levofloxacin and Cyclosporin A in Human Microdose Plasma Samples;** Sanggoo Kim; Joohye Jung; Jinwoo Jung; Jongbok Seo; Korea Basic Sci. Institute, Seoul, South Korea
- WP 256 **LC-MS/MS for the Assessment of the Biological Implications of Carboxyalkylation of Guanine in the Nucleotide Pool;** Lijuan Fu; University of California, Riverside, Riverside, CA
- WP 257 **Quantification by LC-MS/MS of Psychotropic Drugs in Different Mice Tissues;** Bruno Manadas^{1,2}; Vera M. Mendes¹; Ana I.S. Ferreira^{1,3}; Sandra Rocha⁴; Jorge Costa Pereira³; Graça Baltazar⁴; David Cotter⁵; Mike J. Dunn²; ¹Center for Neuroscience and Cell Biology, Cantanhede, Portugal; ²UCD Conway Institute, Dublin, Ireland; ³Chemistry Department, University of Coimbra, Coimbra, Portugal; ⁴Centro de Investigação em Ciências da Saúde, Covilhã, Portugal; ⁵Department of Psychiatry, Royal College of Surgeon, Dublin, Ireland
- WP 258 **An LC-MS/MS Analytical Method for Mephedrone and Naphyrone Analysis in Urine;** Theresa Lee; Witold Woroniecki; John McFarlane; AB SCIEX, Foster City, CA
- WP 259 **Development of a Bioanalytical Workflow to Support an Enhanced P-glycoprotein (P-gp) Inhibition Assay;** Ying Li; Anthony Paiva; Janet Kolb; Aaron Walker; Andrew Wagner; Xianmei Cai; Harold Weller; John Herbst; Wilson Shou; Bristol-Myers Squibb Company, Wallingford, CT
- WP 260 **An LC-MS/MS Method for Simultaneously Determining Formoterol and Budesonide in Human Plasma with Dual HPLC System;** Xiping Fang¹; Lailiang Zhai²; Dawei Zhou¹; ¹XenoBiotic Laboratories, Inc., Plainsboro, NJ; ²Zef Scientific Inc., San Diego, CA
- DRUG METABOLISM: QUALITATIVE ANALYSIS II; 261 - 286**
- WP 261 **Investigation of Intracrine Metabolism of Raloxifene and Tamoxifen in Ishikawa Human Endometrial Cell and MCF-7 Human Breast Cancer Cell Lines;** Lori Coward; Teresa Wilborn; Erika Cretton-Scott; Gregory Gorman; Samford University, Birmingham, AL
- WP 262 **Development of a Mass Spectrometry Assay to Identify Compounds Forming Reactive Metabolites with La Antigen Protein in Microsomal Mixtures;** Damien Ready; Nari Talaty; Laura Miesbauer; Robert W. Johnson; Melanie J. Patterson; Abbott Laboratories, Abbott Park, IL
- WP 263 **Metabolite Identification of Rifampicin in Human Urine by Modern Tools of Liquid Chromatography–Mass Spectrometry;** Jun Wang¹; Lijia Zhu¹; Ying Wang²; Jiazhang Xu¹; Weiguoi Tan¹; Rong'an Li¹; Yingzhou Yang¹; Xiaoli Liu¹; ¹Shenzhen Center for Chronic Disease Control, Shenzhen, China; ²Agilent Technologies, Shanghai, China
- WP 264 **Untargeted Metabolic Profiling using LC-QTOF MS in Human Urine Treated with Rifampicin;** HyangHee Yang; SeungHwan Lee; SeoHyun Yoon; KyungSang Yu; InJin Jang; JooYoun Cho; Seoul National University College of Medicine, Seoul, Republic Korea
- WP 265 **Metabolic Stability of Leucine-Based gamma-Lactone Prodrugs Developed for the Treatment of Alzheimer's Disease;** Andrew Lampkins; Gregory Gorman; Lori Coward; Erika Cretton-Scott; Samford University, Birmingham, AL
- WP 266 **Metabolites of Thalidomide Using the Humanized CYP3A Transchromosomal Mouse Liver Microsomes, Detected by LC-MS/MS system;** Shin-ichiro Nitta¹; Yasuko Tsukazaki¹; Naoto Senda¹; Toshiyuki Yamazaki²; Masato Aoshima²; Tsutomu Nakai³; Kinya Kubo⁴; Yasuhiro Kazuki⁴; Mitsuo Oshimura⁴; ¹Mitsubishi Chemical Medience Corporation, Tsukuba, Japan; ²K. K. AB Sciex, Shinagawa-ku, Japan; ³Shimadzu Corporation, Kyoto, Japan; ⁴Chromosome Engineering Research Center, Yonago, Japan
- WP 267 **Introduction of UPLC/High Resolution Mass Spectrometry combined with Ion Mobility Separation/MS^E-Techniques for the Analysis of *in vivo* Drug Metabolism Studies;** Stefan Blech; Ralf Laux; Boehringer-Ingelheim Pharma GmbH & Co.KG, Biberach, Germany
- WP 268 **Combined Application of Hybrid Triple Quadrupole Linear Ion Trap and High Resolution Accurate Mass Systems for Metabolite Identification Workflows;** Hua-Fen Liu; Alexandre Wang; Elliott Jones; AB SCIEX, Foster City, CA
- WP 269 **Troglitazone Metabolism in a Chimeric Mouse Model with Humanized Livers Determined by High Mass Accuracy MSn Analysis;** Alan Barnes¹; Neil Loftus¹; Ian Wilson²; Timothy Schulz-Utermoehl²; Michopoulos Filippou²; Yoshio Morikawa³; ¹Shimadzu ISS MS/BU, Manchester, UK; ²Astra Zeneca, Alderley Park, Cheshire, UK; ³PhoenixBio Co. Ltd, Higashi-Hiroshima, Japan
- WP 270 **High Sensitivity Characterization of Propanolol and Associated Metabolites Utilizing Intergrated Microfluidic LC/MS/MS;** Paul Rainville²; Michael Tomany¹; James Murphy¹; Norman Smith²; Robert Plumb³; ¹Waters Corporation, Milford, MA; ²Kings College London, London, UK; ³Imperial College, London, UK
- WP 271 **Comparative study of *in-vitro* Metabolites of Investigational Anticancer Agents using RLMS, Rat Hepatocytes and HepG2 by LC-Ion Trap Mass Spectrometry;** Mohamed Attwa; Adnan Kadi; King Saud University, College of Pharmacy, Riyadh, Saudi Arabia
- WP 272 **Leveraging a Mixed Platform Approach for Confident Characterization and Identification of Drug Metabolites;** Ming Qi; Mark Gohdes; Joseph T. Marini; Xiaohong Liu; Heiko Junga; Donald L. McKenzie; Laura A. Egnash; Covance Laboratories, Madison, WI
- WP 273 **The use of UPLC-MS/MS for Separation and Identification Diastereomeric Hydroxylated Metabolites of GS-9667 *in vivo* and *in vitro*;** Chungwen Chen; Nevena Mollova; Eve-Irene Lepist; Kwan Leung; Gilead Sciences, Inc., Palo Alto, CA

- WP 274 **Human Metabolism of AM6-36, a Retinoid X Receptor- α Ligand**; Lian Chen¹; Martin Conda-Sheridan²; Mark Cushman²; John M. Pezzuto³; Richard B. van Breemen¹; ¹University of Illinois College of Pharmacy, Chicago, IL; ²School of Pharmacy, Purdue University, West Lafayette, IN; ³College of Pharmacy, University of Hawaii at Hilo, Hilo, HI
- WP 275 **The Use of a LTQ-XL Linear Ion Trap to Detect 21 Metabolites in a Single Injection**; Todd Baughman; GlaxoSmithKline, Research Triangle Park, NC
- WP 276 **Linear Ion Trap MS vs. High Resolution Quadrupole TOF-MS: Which Provides More Useful Data in a Drug Discovery Program?**; Richard Schneider¹; Veronica Zelesky¹; Brendon Kapinos¹; Alfin Vaz¹; James A. Ferguson²; ¹Pfizer Global R&D, Groton, CT; ²AB Sciex, Framingham, MA
- WP 277 **Characterisation of Melarsoprol, an Arsenic-containing Pharmaceutical, and Its Metabolites by HR-MS/MS**; Reingard Raml¹; Georg Raber²; Theresa A. Shapiro³; Rahul Bakshi³; Kevin A. Francesconi²; Christoph Magnes¹; ¹Joanneum Research-Health, Graz, Austria; ²Institute of Chemistry, Karl-Franzens University, Graz, Austria; ³Department of Medicine, Johns Hopkins University, Baltimore, MD
- WP 278 **Characterization of [6]-Gingerol Metabolism in Rat by LC-MS/MS and Accurate-Mass TOF**; Marie-Lou Gauthier¹; Jennifer Douat²; Pascal Vachon¹; Francis Beaudry¹; ¹Université de Montréal, St-Hyacinthe, Canada; ²Institut de Chimie Pharmaceutique Albert Lespagnol, Lille, France
- WP 279 **LC/MS/MS Analysis of *in vivo* Intracellular Metabolites in Rat Liver Tissue after Administration of INX-189, a Potent HCV Inhibitor**; Jerry Muhammad¹; Jin Wang¹; Aleksandr Obikhod¹; C. Robin Walters¹; Damound Hunley¹; K. Dawn Bryant¹; Stan Chamberlain¹; Christopher McGuigan²; Karolina Madela²; John Vernachio¹; Elena Gorovits¹; ¹Inhibitex, Inc., Alpharetta, GA; ²Welsh School of Pharmacy, Cardiff University, Cardiff, UK
- WP 280 **Characterization of Metabolites of BIIB014 in Humans, Rats and Monkeys**; Biplab Das; Natalia Penner; Chandra Prakash; Biogen Idec, Cambridge, MA
- WP 281 **Characterization of Ethacrynic Acid-modified Amino Acid(s) in Human Hemoglobin by Enzyme Digestion and Liquid Chromatography-Mass Spectrometry**; Min Yang¹; Wing W. Lam²; Jose Silva²; Heng-Keang Lim²; ¹University of Virginia, Charlottesville, VA; ²Johnson and Johnson PRD, Raritan, NJ
- WP 282 **Repurposing FDA Approved Drugs: LC-HRMS Characterization of Metabolites of Drugs that Inhibit Cancer Cell Growth**; Samantha Mahmoud; Dil Ramanathan; Kean University, Union, NJ
- WP 283 **Investigation of the Mechanisms of Time Dependent Inactivation of CYP3A4 Enzyme by Direct Protein Adduct Analysis using LTQ-Orbitrap**; Shihong Wang; Song Lin; Li Xiao; Elaine Ginn; Kent Wong; Novartis Institute for Biomedical Research, Emeryville, CA
- WP 284 **Metabolite Identification for an Antileishmanial Arylimidamide (DB2002)**; Qiang Liu¹; Abdelbasset Farahat²; David Boykin²; Richard Tidwell¹; Michael Zhuo Wang¹; ¹University of North Carolina at Chapel Hill, Chapel Hill, NC; ²Georgia State University, Atlanta, GA
- WP 285 **Direct Single Cell Analysis of Intracellular Drug Metabolism in a Primary Hepatocyte**; Sachiko Date¹; Hajime Mizuno¹; Naohiro Tsuyama¹; Takanori Harada¹; Iwao Sakane²; Tsutomu Masujima¹; ¹Hiroshima Univ. BioMed., Hiroshima, Japan; ²ITO-EN LTD, Shizuoka, Japan
- WP 286 **Differentiating Regioisomers of Hydroxylated Drug Metabolites with a High Resolution QTOF with Enhanced Ion Mobility Capabilities**; Joseph T. Marini¹; Stephen McDonald²; Mark D. Wrona²; Xiaohong Liu¹; Heiko Junga¹; Laura A. Egnash¹; Donald L. McKenzie¹; Guido F. Verbeck³; ¹Covance Laboratories Inc., Madison, WI; ²Waters Corporation, Beverly, MA; ³Department of Chemistry, University of North Texas, Denton, TX
- METABOLOMICS: GENERAL I; 287 - 306**
- WP 287 **Robust Metabolite Profiling and Identification Employing High Resolution MS Strategies and Dedicated Software**; Helen Welchman¹; David Portwood²; Mark Seymour²; Charles Baxter²; Mark Earll²; Martin Hornshaw¹; Madalina Oppermann¹; ¹Thermo Scientific, Kungens Kurva, Sweden; ²Syngenta, Jealotts Hill International Research Centre, UK
- WP 288 **An Automated Data Analysis Pipeline for GC-TOF-MS Metabolomics Studies**; Xiuxia Du; Yan Ni; UNC-Charlotte, Kannapolis, NC
- WP 289 **Exploring the 'Dark Matter' of Metabolite Profiles. An AMDIS-based Workflow for the Creation of Libraries of Recurring Mass Spectra**; John M. Halket²; W. Gary Mallard¹; Yuri Mirokhin¹; Stephen Stein¹; ¹NIST, Gaithersburg, MD; ²Imperial College, London, UK
- WP 290 **Development of a Reference Material to Support Metabolomics Research**; Karen Phinney; Stephen Long; Lane Sander; Michele Schantz; Katherine Sharpless; Gregory Turk; Stephen Wise; NIST, Gaithersburg, MD
- WP 291 **An Interactive Website for Users of Standard Reference Material 1950: Metabolites in Human Serum**; William E. Wallace; Niksa Blonder; Mark Lowenthal; W. Gary Mallard; Karen Phinney; Paul Rudnick; Yamil Simon; Edward White; Stephen Stein; National Institute of Standards and Technology, Gaithersburg, MD
- WP 292 **Atmospheric Pressure Laser Ionization-Mass Spectrometry (APLI-MS) – A Method for the Analysis of Samples of Biological Origin**; Ralf Schiewek¹; Dick-Paul Kloos^{1,2}; Bart Schoenmaker¹; Rico J.E. Derks¹; André M. Deelder¹; Oleg A. Mayboroda¹; ¹Leiden University Medical Center (LUMC), Leiden, Netherlands; ²Free University of Amsterdam, Amsterdam, Netherlands
- WP 293 **Subcellular Analysis by Laser Ablation Electrospray Ionization Mass Spectrometry**; Jessica A. Stolee; Bindesh Shrestha; Akos Vertes; George Washington University, Washington, DC
- WP 294 **Multivariate Statistical Methods for Biomarker Discovery from Laser Ablation Electrospray Ionization Mass Spectra of Small Cell Populations and Single Cells**; Bindesh

- WP 295 **Shrestha¹; Joseph Patt²; Akos Vertes¹; ¹George Washington University, Washington, DC; ²USDA-Agricultural Research Service, Weslaco, TX**
Live Single-cell Mass Spectrometry for Real Time Molecular Detection of a Stimulated Allergy Cell Organelle; Hajime Mizuno; Naohiro Tsuyama; Takanori Harada; Tsutomu Masujima; Hiroshima Univ. Grad. Sch. Biomed. Sci, Hiroshima, Japan
- WP 296 **Live Single-cell MS Mediated Monitoring of Molecular Diffusion through Gap Junction in Normal Human Cells;** Naohiro Tsuyama¹; Hajime Mizuno¹; Takanori Harada¹; Iwao Sakane²; Tsutomu Masujima¹; ¹Hiroshima Univ. Grad. Sch. Biomed. Sci, Hiroshima, Japan; ²ITO-EN LTD, Shizuoka, Japan
- WP 297 **Single Cell Analysis of Saccharomyces Cerevisiae on Silicon Nanopost Arrays (NAPA) by Laser Desorption Ionization Mass Spectrometry;** Bennett N. Walker¹; Cory Antonakos¹; Scott T. Retterer²; Akos Vertes¹; ¹George Washington University, Washington, DC; ²Oak Ridge National Laboratory, Oak Ridge, TN
- WP 298 **A Novel Platform for Comprehensive Lipidomics Screening of Biological and Human Clinical Samples Based on MALDI-QIT-TOF-multistage Tandem-Mass Spectrometry;** Gerald Stübiger¹; Wolfgang Werther²; Ian Brookhouse³; Omar Belgacem³; ¹Medical University of Vienna, Vienna, Austria; ²University of Vienna, Vienna, Austria; ³Shimadzu, Manchester, UK
- WP 299 **Novel Data Acquisition and Processing Strategies for Targeted Metabolome Profiling Using Differential Isotope Labeling and High Resolution Accurate Mass Spectrometry;** Yasmin Boukhedimi²; Sarah Jenna²; Eva Duchoslav¹; Suma Ramagiri¹; Lekha Sleno²; ¹AB SCIEX, Concord, Canada; ²UQAM, Montreal, QC
- WP 300 **Urinary Metabolomic Analysis by Ultra-high Performance Liquid Chromatography/ Fourier Transform Ion Cyclotron Resonance Mass Spectrometer and Ion Trap Mass Spectrometer;** Yi-Ting Kao¹; Chien-Lun Chen²; Yi-Ting Chen¹; Chiun-Gung Juo¹; ¹MMRC, Chang Gung University, Tao-Yuan, Taiwan; ²Chang Gung Memorial Hospita, Tao-Yuan, TW
- WP 301 **Metabolomics: Fast UPLC/MS/MS Targeted MRM Analysis of L-arginine, Homoarginine, ADMA and SDMA Levels in Serum and Tissue Samples;** Sam Sajid^{2,3}; Jason Weigel Weigel¹; Renu Nandakumar²; M.P. Nandakumar²; Sandra M. Wells¹; ¹College of Public Health, UNMC, Omaha, Omaha, NE; ²RBC, University of Nebraska Lincoln, Lincoln, NE
- WP 302 **Utilizing Liquid Chromatography Couple with Selective Reaction Monitoring (LC-SRM) for Comprehensive Metabolic Profiling of Lignin Biosynthesis in Woody Plants;** Christopher Shuford; Jie Liu; Hsi-Chuan Chen; Ronald R. Sederoff; Vincent L. Chiang; David C. Muddiman; N.C. State Univeristy, Raleigh, NC
- WP 303 **Accurate Mass HILIC-MS/MS for Metabolomics Analysis of Blood Plasma;** John Meissen¹; Massud Atta¹; Kevin Siek²; Alessio Ceroni³; Tobias Kind¹; Oliver Fiehn¹; ¹UC Davis, Davis, CA; ²LECO Corporation, Saint Joseph, MI; ³Genedata, Lexington, MA
- WP 304 **A Reversed Phase and Hydrophilic Interaction Chromatography LC Setup Coupled to Dual Polarity ESI- MS for High Throughput Metabolomics;** Anders Nordstrom; Anna Lindahl; Hasan Bhuiyan; Karolinska Institutet, Stockholm, Sweden
- WP 305 **Overcoming the Challenges in Targeted and Non-targeted Metabolite Profiling of Myxobacterial Secondary Metabolites using UHR-Q-TOF-MS Analysis;** Daniel Krug^{1,2}; Aiko Barsch³; Gabriela Zurek³; Niña Cortina¹; Kevin Guo⁴; Rolf Mueller^{1,2}; ¹Pharmaceutical Biotechnology, Saarland University, Saarbrücken, Germany; ²Helmholtz Center for Infection Research, Saarbrücken, Germany; ³Bruker Daltonik GmbH, Bremen, Germany; ⁴Bruker Daltonics, Billerica, MA
- WP 306 **Utilizing Accurate Mass High Speed Scanning Techniques in High-Throughput Sample Profiling;** Eva Duchoslav; Xu Guo; Lyle Burton; Gordana Ivoisev; Nic Bloomfield; Xiang Gao; Ron Bonner; AB Sciex, Concord, Canada
- ENVIRONMENTAL ANALYSIS: PHARMACEUTICALS AND PESTICIDES; 307 - 331**
- WP 307 **Direct Analysis of Pharmaceutical and Personal Care Products in Drinking Water at Trace Levels with Desorption Electrospray Ionization Mass Spectrometry;** Alain Ton; Ian Campbell; Christopher Mulligan; Illinois State University, Normal, IL
- WP 308 **Direct Analysis of Pharmaceuticals and Personal Care Products from Solid-Phase Microextraction Fibers with Desorption Electrospray Ionization Mass Spectrometry;** Christopher Santee¹; Joseph H. Kennedy²; Justin Wiseman²; Craig Aurand³; Christopher Mulligan¹; ¹Illinois State University, Normal, IL; ²Prosolia, Inc., Indianapolis, IN; ³Sigma Aldrich, Bellefonte, PA
- WP 309 **Advantages of APPI Ionization for the Detection of Challenging Analytes at Trace Levels in Environmental Water Samples;** Chengtao Wang; Piero Gardinali; Florida International University, Miami, FL
- WP 310 **Screening for Pharmaceuticals and Personal Care Products in Drinking Water Using a 3-D Iontrap and Automated Online Sample Preparation;** Mary Blackburn; Yukiko Kawahara; Maria C. Prieto Conaway; Thermo Fisher Scientific, San Jose, CA
- WP 311 **Interlaboratory Comparison of Analytical Methods for EDCs and PPCPs in Water;** Y. Carrie Guo¹; Brett J Vanderford²; Jorg Drewes³; Andrew Eaton⁴; Shane Snyder⁵; Thomas Ternes⁶; Curtis Wood⁷; ¹Metropolitan Water District, La Verne, CA; ²Southern Nevada Water Authority, Las Vegas, NV; ³Colorado School of Mines, Golden, CO; ⁴MWH Laboratories, Monrovia, CA; ⁵University of Arizona, Tucson, AZ; ⁶Federal Institute of Hydrology, Koblenz, Germany; ⁷Environmental Resource Associates, Arvada, CO
- WP 312 **High Resolution Mass Spectrometry for Detecting, Characterizing and Quantifying Pharmaceutical in Tap Water;** Rebeca Pinhancos; Dilrukshi Ramanathan, PhD; Kean University, Union, NJ
- WP 313 **Rapid Degradation of Fluoxetine using Fe(III)-TAML/H₂O₂ System Inspiring Green**

- Pharmaceutical Design; Longzhu Q. Shen¹;** Dwight J. Tshudy²; Edward P. Zovinka³; Mark E. Bier¹; Terrence J. Collins¹; ¹Carnegie Mellon University, Pittsburgh, PA; ²Gordon College, Wenham, MA; ³Saint Francis University, Loretto, PA
- WP 314 **Validation, by the use of Isotope-labeled Compounds, of a Chiral LC-MS/MS Method Developed to Quantify Fluoxetine and Norfluoxetine in Wastewater; Victoria Barclay¹;** Niklas Tyrefors²; Monika Johansson³; Curt Pettersson¹; ¹Uppsala University, Uppsala, Sweden; ²Oasmia Pharmaceutical AB, Uppsala, Sweden; ³Medical Products Agency, Uppsala, Sweden
- WP 315 **Using Zebrafish (*Brachydanio rerio*) as a Model to Study Impact of Erythromycin as a Water Pollutant in New Jersey; Joe-Louis Yarfí;** Dil Ramanathan; Kean University, Union, NJ
- WP 316 **Analysis of Estrone and 17 β -estradiol in Ground Water by GC-NCI-MS/MS; Anthony Macherone;** Melissa Churley; Agilent Technologies, Wilmington, DE
- WP 317 **Discovery and Identification of a True Unknown Compound in River Water by UPLC-QToF MS; Kenneth Rosnack¹;** Eleanor Riches²; Hilary J. Major²; ¹Waters Corp., Milford, MA; ²Waters Corporation, Manchester, UK
- WP 318 **LC/MS/MS of Pyrethroids, Their Metabolites, and Bisphenol A in Solid Food Composites as a Complement to Biomonitoring; Denise MacMillan¹;** R. Dan Zehr¹; Marsha K. Morgan²; ¹USEPA/NHEERL, Research Triangle Park, NC; ²USEPA/NERL, Research Triangle Park, NC
- WP 319 **Recent Advances in the Analysis of Pyrethroid Insecticides in Surface Water and Sediments by Tandem GC/MS; Abdou Mekebi¹;** Stephan Baumann²; ¹California Department of Fish and Game, Rancho Cordova, CA; ²Agilent Technologies, Inc., Santa Clara, CA
- WP 320 **LC-MS/MS Analysis of Heterogeneous Interactions of Environmental Contaminants; Heather Gamble¹;** Geoff Harris²; Mitesh Patel²; Donald Gamble³; ¹IONICS Mass Spectrometry Group, Inc., Bolton, Canada; ²Chemistry Department, York University, Toronto, Canada; ³Department of Chemistry, Saint Mary's University, Halifax, Canada
- WP 321 **Ion Funnel Operation for Efficient Transmission of Labile Ions: Enhanced Sensitivity for the Detection of Multiresidue Pesticide in Fruits/Vegetables; Stefan Kittlaus¹;** Michael Flanagan²; Thomas Glauner²; Guenther Kempe¹; Paul Momoh²; ¹LUA Sachsen, Reichenbachstr. 71/73, Dresden, Germany; ²Agilent Technologies, Santa Clara, CA
- WP 322 **Determination of Chlorpyrifos in Environmental Matrices using Isotope Dilution Methodology and GC Quadrupole and Magnetic Sector MS; Vyacheslav N. Fishman¹;** Alaine Sledz²; Todd R. Tambling¹; Marty D. Crook³; Lori L. Hoevemeyer³; ¹The Dow Chemical Company, Midland, MI; ²Kelly Scientific Inc., Midland, MI; ³URS, Midland, MI
- WP 323 **Quantification of Organophosphates Insecticides in Drinking Water Using Automated Online Sample Preparation and a 3-D Iontrap; Yukiko Kawahara;** Dipankar Ghosh; Maria C. Prieto Conaway; Mary Blackburn; Thermo Fisher Scientific, San Jose, CA
- WP 324 **Simultaneous Analysis of Phenoxy Acid Herbicides Mixtures Using In-source CID, MS, and MS/MS; Kevin Bennett;** Hood College, Frederick, MD
- WP 325 **Simultaneous Analysis of Polar and Non-polar Pesticides in One Run Using Orthogonal LC Separation; Fiona F. K. Lo¹;** Ricky P. W. Kong¹; William W. L. Chan¹; Herman C. Lam²; Dominic C. M. Ng¹; Ivan K. Chu¹; ¹The University of Hong Kong, Hong Kong, China; ²Hexagram Analytics Limited, Hong Kong, China
- WP 326 **Preliminary Target Screening of Pesticides in Surface Water from Youngsan River of Korea by SPE-LTQ-Orbitrap and Automated Screening Software; Jaewon Choi;** Kwater, Daejeon, South Korea
- WP 327 **Improving the LC-MSMS Selectivity of Triazole-Based Conjugates with Differential Mobility Spectrometry; Ralf M. Schoening¹;** Julia Jasak¹; Uwe Thuß²; Karl Speer⁵; Mauro Aiello³; Doina Caraiman⁴; J.C. Yves Leblanc³; ¹Bayer CropScience AG, Monheim, Germany; ²Bayer HealthCare AG, Wuppertal, Germany; ³AB SCIEX, Concord, ON; ⁴AB/ SCIEX, Concord, ON; ⁵Technische Universität Dresden, Dresden, Germany
- WP 328 **Low-Level Determination of Triazine Herbicides using Single Quadrupole LC/MS with a Field-Free APCI Source; Avinash Dalmia¹;** Thomas White²; Daniel Pentek¹; ¹PerkinElmer, Shelton, CT; ²PerkinElmer, Inc., Branford, CT
- WP 329 **Analytical Methodology to Monitor the Environmental Fate of Atrazine and Cyromazine; Anthony Macherone;** Ronald Honnold; Stephan Baumann; Agilent Technologies, Wilmington, DE
- WP 330 **Accurate Isotopic Fine Structure and Relative Isotope Abundance by Ultra-High Resolution Time-of-Flight Mass Spectrometry for Confident Elemental Composition Determination; Kevin Siek¹;** Viatcheslav Artaev¹; Joe Binkley¹; John Chakel¹; Mikhail Gavrik^{2,3}; Jeffrey Patrick¹; George Tikhonov¹; ¹LECO Corporation, Saint Joseph, MI; ²Russian Academy of Science, Saint Petersburg, Russian Federation; ³MS Consulting Ltd., Saint Petersburg, Russian Federation
- WP 331 **Analytical Methodology to Improve Pesticide Residue Analysis with Ion Trap GC/MS/MS; Brian Hom;** Ron Honnold; Agilent Technologies, Santa Clara, CA

ORGANIC AND ORGANOMETALIC SUPRAMOLECULAR COMPLEXES; 332 - 343

- WP 332 **Arsenyl(III)- D,L-Tartrates Exhibit Proton-Assisted Enantioselective Binding of Neutral Amino Acids in Solution and in the Gas Phase; Caleb Hodge¹;** Samuel Yang¹; Doug Carlton¹; Aruna Wijeratne²; Kevin Schug¹; ¹The University of Texas at Arlington, Arlington, TX; ²Department of Cancer and Cell Biology, Cincinnati, OH
- WP 333 **Noncovalent Complexes of Drug Molecules Formed by Aromatic Stacking; Shelley N Jackson;** Amina S. Woods; NIDA-IRP, NIH, Baltimore, MD

- WP 334 **Separation and Identification of Cobalt (III) Catalyst for CO₂/Epoxide Copolymerization by HILIC Coupled to Electrospray Ionization Mass Spectrometry;** Jong Hee Song; Myung Ahn Ok; Jae Suk Koh; *SK Innovation Global Technology, Daejeon, South Korea*
- WP 335 **Investigation of Molecular Recognition Valency Using Threshold Dissociation in an Ion Trap Mass Spectrometer;** Jonathan M. Bobbitt¹; Samuel H. Yang¹; Doug D. Carlton¹; Norbert M. Maier²; Wolfgang Lindner²; Kevin A. Schug¹; ¹University of Texas at Arlington, Arlington, TX; ²Institute for Analytical Chemistry, Vienna, Austria
- WP 336 **Detection of Chiral Compound/Stationary Phase Interactions using Mass Spectrometry: A Rapid Screening Method for Chiral Stationary Phase Selection;** Melissa Thompson; James Murphy; Janice Gard; David McKenzie; *Pfizer Inc., Chesterfield, MO*
- WP 337 **Ternary Complexes of Polyethyleneimine, Oligonucleotides, and Polyglutamic Acid Studied by Mass Spectrometry;** Daniela Smiljanic; Chrys Wesdemiotis; *The University of Akron, Akron, OH*
- WP 338 **Host-guest Chemistry Investigated by Mass Spectrometry: Which do 3iPO Phosphocavitand Like Best Choline or Acetylcholine?;** Mahdi M. Harb¹; Carla Montano¹; Victor Buridon¹; Khalid El Farkh¹; Stefan Feil¹; Cécile Teyssier¹; Hassan Abdoul-Carime¹; Jean-Pierre Dutasta²; Bernadette Farizon¹; Michel Farizon¹; Tilmann D. Märk³; Jérôme Vachon²; ¹CNRS/IN2P3, UMR5822, IPNL - Université Lyon 1, Villeurbanne, France; ²CNRS UMR5182 - ENS Lyon, Laboratoire de Chimie, Lyon, France; ³Leopold Franzens Universität, IfP, Innsbruck, Austria
- WP 339 **Accurate Mass Analysis of Coordination Assemblies;** Marie-Christine Tang¹; Karine Venne¹; Marie-Pierre Santoni^{1,2}; Garry Hanan¹; Alexandra Furtos¹; ¹Université de Montréal, Montréal, Canada; ²Université Pierre et Marie Curie, Paris, France
- WP 340 **DART-MS, ⁵¹VNMR and X-ray Crystallographic Studies on Novel Oxo-bridged Polyvanadates [H₂V₁₀O₂₈]•4[LH] (L = 2-methyl imidazole or 4-picoline): 3D Supramolecular Assembly;** Zafar A. Siddiqi; *Aligarh Muslim University, Aligarh, India*
- WP 341 **Characterization of Cucurbit[n]uril Complexes with α,ω-Alkyldiammonium Ions via Experiment and Theory;** Fan Yang¹; David V. Dearden¹; Kimoon Kim²; N. Selvapalam²; Youngkook Kim²; ¹Brigham Young University, Provo, UT; ²POSTECH, Pohang, Korea
- WP 342 **Influence of Weak Noncovalent Interactions on Supramolecular Binding: Characterization of Cucurbit[n]uril Complexes with Alkylmonoammonium Ions via Experiment and Theory;** David V. Dearden¹; Ruijun Shi¹; Kimoon Kim²; Youngkook Kim²; N. Selvapalam²; ¹Brigham Young University, Provo, UT; ²POSTECH, Pohang, Korea
- WP 343 **Kinetic Capillary Electrophoresis Coupled to Mass Spectrometry (KCE-MS) Reveals Stoichiometry and Binding Parameters of Drug-Cyclodextrin Noncovalent Complexes;** Gleb Mironov; Jennifer Logie; Victor Okhonin; *Maxim Berezovski; University of Ottawa, Department of Chemistry, Ottawa, Canada*
- WP 344 **Metabolite Identification of Complex Herbal Medicines in Rat Plasma and Intestine using High Resolution Accurate Mass Spectrometry;** Jirui Hou²; Suma Ramagiri¹; Takeo Sakuma¹; Carmai Seto¹; Vanaja Raghuvaran¹; Ed Lui²; ¹AB SCIEX, Concord, Canada; ²University of Western Ontario, London, Canada
- WP 345 **Quantitative Analysis of Epicatechin Metabolites in Human Serum Using UHPLC-MS-MS;** Brian Wright¹; Shunyan Mo¹; Linlin Dong¹; Jeff Dahl²; W. Jeffrey Hurst³; Richard B. Van Breemen¹; ¹University of Illinois College of Pharmacy, Chicago, IL; ²Shimadzu Scientific Instruments, Columbia, MD; ³The Hershey Company, Mt. Gretna, PA
- WP 346 **Detection of Diapocynin and Apocynin Accumulation in Low Micromolar Concentrations in the CNS by HPLC-MS using Selective Ion Monitoring;** Jeffrey Morre; Joe Beckman; *Oregon State University, Corvallis, OR*
- WP 347 **In vivo Metabolite Identification of Ganoderic Acid D (Extracted from Ganoderma lucidum) by UPLC/oaTOF MS^E;** Min Yang¹; Kate Yu²; Chunru Cheng¹; Alan Millar²; Dean Guo¹; ¹Shanghai Institute of Materia Medica, Shanghai, China; ²Waters Corporation, Milford, MA
- WP 348 **LC-MS Analysis of Prenylated Flavonoids from Hops in Support of a Phase I Clinical Trial;** Dejan Nikolic¹; Yang Yuan¹; Brian Wright¹; Suzanne Banuvar²; Lee Shulman²; Richard B. Van Breemen¹; ¹University of Illinois College of Pharmacy, Chicago, IL; ²Northwestern University School of Medicine, Chicago, IL
- WP 349 **Pharmacokinetics of Xanthohumol, a Prenylflavonoid Derived from Hops, in Rats;** LeeCole Legette¹; Ralph Reed²; Cristobal Miranda^{1,2}; Rosita Proteau²; J. Fred Stevens^{1,2}; ¹Linus Pauling Institute, Oregon State University, Corvallis, OR; ²College of Pharmacy, Oregon State University, Corvallis, OR
- WP 350 **The Role of FTICR-MS in Meta-omic Analysis of a Drug-producing Marine Invertebrate Microbial Consortium;** Christopher M. Rath¹; Benjamin Janto²; Josh Earl²; Azad Ahmed²; Fen Z. Hu²; Luisa Hiller²; Meg Dahlgren²; Rachael Kreft²; Fengang Yu¹; Jeremy J. Wolff³; Hye Kyong Kweon¹; Michael Christiansen⁴; Kristina Hakansson¹; Robert M. Williams⁴; Garth D. Ehrlich²; David H. Sherman¹; ¹University of Michigan, Ann Arbor, MI; ²Allegheny-Singer Research Institute, Pittsburgh, PA; ³Bruker Daltonik, Billerica, MA; ⁴Colorado State University, Fort Collins, CO
- WP 351 **Profiling of Bioactive Chocolate Extracts by High Resolution Mass Spectrometry;** Thao To¹; C. Logan Mackay²; Martin Sadilek¹; Pat Langridge-Smith²; Andrew McShea³; Richard Darveau¹; David R. Goodlett¹; ¹University of Washington, Seattle, WA; ²SIRCAMS, School of Chemistry, Edinburgh University, Edinburgh, UK; ³Theo Chocolate, Seattle, WA
- WP 352 **Comparison of Secondary Metabolite Profiles of a Marine Actinomycete Cultured in the Presence and Absence of Agar by LCMS-IT-TOF;** Andrew Newsome; Ursula Tanouye; Sigrid Baumgarten; Xiaomei Wei; Brian Murphy; Richard

- van Breemen; *University of Illinois College of Pharmacy, Chicago, IL*
- WP 353 **High Resolution Mass Profiling of Fermented *Astragalus membranaceus* Extracts using 15T FT-ICR MS**; Min-sun Kim; Kyu Hwan Park; Hee Young An; Sang Beom Lee; Hyo-Jik Yang; Hyun Sik Kim; *Korea Basic Science Institute, Daejeon, South Korea*
- WP 354 **Differential Analysis of Natural Products using Fast Polarity Switching TOFMS Acquisition with High Mass Accuracy and Metabolomics-based Approach**; Satoshi Yamaki; Tairo Ogura; Tsutomu Nishine; Hirohisa Mikami; *Shimadzu Corporation, Kanagawa, Japan*
- WP 355 **Development of UHPLC/UV/CAD/Q-ToF-MS/MS Methodology to Characterize Complex Botanical Mixtures**; Brian T. Regg; Donna A. McMillan; Catherine Mahony; Timothy R. Baker; *Procter & Gamble, Mason, OH*
- WP 356 **Prediction of Metabolites in Methanolic Crude Extract from *Parkia speciosa* Pod using LCMS Q-TOF and Metlin Metabolite Database**; Chee Yuen Gan; Aishah A. Latiff; *Doping Control Centre, Usm, Malaysia*
- WP 357 **Determination of Adulterated Hypnotics in TCM products with Quadrupole Time-of-Flight Mass Spectrometry and Confirmed by Accurate Mass Database and Library**; Ying Wang; *Agilent Technologies (China), Shanghai, China*
- WP 358 **LCMS Analysis of a Chinese Herbal Medicine Product**; Anja Gruening; *Duisburg, Germany*
- WP 359 **Identification and Characterization of Key Chemical Constituents for the Authentication of *Hoodia gordonii* using UPLC/oaTOF MS^E**; Bharathi Avula¹; Kate Yu²; Yan-Hong Wang¹; Alan Millar²; Ikhlas Khan³; ¹NCNPR, *University of Mississippi, University, Mississippi*; ²Waters Corporation, *Milford, MA*; ³Department of Pharmacognosy, *Univ Mississippi, University, Mississippi*
- WP 360 **Rapid Differentiation of *Schisandra sphenanthera* and *Schisandra chinensis* by MALDI-MS**; Lai Ying Han; So Pui-Kin; Yao Zhongping; *The Hong Kong Polytechnic University, Kowloon, Hong Kong*

INFORMATICS: SMALL MOLECULAR IDENTIFICATION AND CHARACTERIZATION; 361 - 366

- WP 361 **Accurate Mass Measurements: Identifying "Known Unknowns" using ChemSpider**; James L. Little¹; Antony Williams²; Valery Tkachenko²; ¹Eastman Chemical Company, *Kingsport, TN*; ²ChemSpider, *Royal Society of Chemistry, Wake Forest, NC*
- WP 362 **Improved Compound Identification Using Mass Spectral Similarity Measures Based on Wavelet/Fourier Transforms**; Imhoi Koo; Seong Kim; Xiang Zhang; *University of Louisville, Louisville, KY*
- WP 363 **Using Retention Indices to Enhance the Confidence of Compound Identification in Gas Chromatography Mass Spectrometry**; Jun Zhang; Aiqin Fang; Xiang Zhang; *University of Louisville, Louisville, KY*
- WP 364 **LC-MS/MS Library Search Approach for Toxicological Screening: Efficiently Use High Mass Precision**; Pierre-Alain Binz^{1,2}; Christoph Koehler³; Roman Mylonas¹; Nicolas Budin¹;

Alexandre Masselot¹; Thomas Grobosch³; Torsten Binscheck³; ¹Geneva Bioinformatics (GeneBio), *Geneva, Switzerland*; ²Swiss Institute of Bioinformatics, *Geneva, Switzerland*; ³Clinical Toxicology and Poison Information Centre, *Berlin, Germany*

- WP 365 **De novo Identification of Small Molecules with Computer Generated MS/MS Libraries**; Tobias Kind; Oliver Fiehn; *UC Davis-Metabolomics, Davis, CA*

- WP 366 **Computation of Fragmentation Trees from Metabolite Multiple Mass Spectrometry Data**; Kerstin Scheubert; Franziska Hufsky; Florian Rasche; Sebastian Böcker; *Friedrich-Schiller-University, Jena, Germany*

INFORMATICS: VALIDATION; 367 - 375

- WP 367 **Comparative Analysis of Power Between Student T-Test and Outlier Sum Test for Proteomic Analysis**; Huy Vuong¹; Kerby Shedden²; David M. Lubman³; ¹Bioinformatics Program, *University of Michigan, Ann Arbor, MI*; ²Department of Statistics, *University of Michigan, Ann Arbor, MI*; ³Department of Surgery, *University of Michigan, Ann Arbor, MI*
- WP 368 **On using Samples of Known Protein Content to Assess the Statistical Calibration of Scores Assigned to Peptide-spectrum Matches in Shotgun Proteomics**; Viktor Granholm¹; William S Noble²; Lukas Käll¹; ¹Stockholm University, *Stockholm, Sweden*; ²University of Washington, *Seattle, WA*
- WP 369 **iProphet: Improved Statistical Validation of Peptide and Protein Identifications in Shotgun Proteomics**; David Shteynberg¹; Eric Deutsch¹; Henry Lam²; Damian Fermin³; Jimmy Eng⁴; Zhi Sun¹; Natalie Tasman⁵; Luis Mendoza¹; Robert Moritz¹; Ruedi Aebersold⁶; Alexey Nesvizhskii³; ¹Institute for Systems Biology, *Seattle, WA*; ²The Hong Kong University of Science and Technology, *Hong Kong*; ³University of Michigan, *Ann Arbor, MI*; ⁴University of Washington, *Seattle, WA*; ⁵Insilicos, *Seattle, WA*; ⁶ETH Zurich, *Zurich, Switzerland*
- WP 370 **Statistical Significance Assignment of Proteotypic Peptides via Database Searches**; Gelio Alves; Aleksey Y. Ogurtsov; Yi-Kuo Yu; *National Center for Biotechnology Information, NLM, Bethesda, MD*
- WP 371 **Comprehensive Evaluation of Statistical Tools Used for Peptide and Protein Identification in Shotgun Proteome Analysis**; Mingguo Xu; Liang Li; *Department of Chemistry University of Alberta, Edmonton, Canada*
- WP 372 **Comparison of Tools for the Label-Free Quantification LC/MS/MS Data without Prior MS2-Based Assignment**; L. Renee Olano; Anthony J. Makusky; Jason S Harrington; Sanford P. Markey; *NIMH/NIH, Bethesda, MD*
- WP 373 **Black Bumper Bayesian: A Chromatography Free Approach to Proteomics with Improved Confidence Statistics**; Jonathan A Epstein¹; Aaron Catlin¹; Brian C. Searle²; Paul S. Blank¹; Peter S. Backlund¹; Alfred L. Yergey¹; ¹NICHD, *NIH, Bethesda, MD*; ²Proteome Software Inc., *Portland, OR*
- WP 374 **IDSieve: A Statistical Approach Incorporating pI Filtering to Improve Confidence in Identification and Quantification of Proteins**;

- Nikhil Garge¹; Xinxin Zhang¹; Benjamin Cargile²; James Stephenson¹; Kristin West¹; Michael Gardner¹; Megan Rowland¹; Maureen K. Bunker¹; ¹Research Triangle Institute, Durham, NC; ²Sapient Proteomics, Morrisville, NC
- WP 375 **A Statistically Validated Proteomic Platform for Reliable Label-Free Quantification Using Spectral Counting**; Michael Ellisor; Chao Gong; Michael Hogan; Carthene Bazemore-Walker; Brown University, Providence, RI
- INFORMATICS: QUANTIFICATION; 376 - 406**
- WP 376 **Advanced Feature Discovery for LC-IMS-MS Data Using a High Dimensional Peak Extraction and Deconvolution Tool**; Da Meng; Anuj Shah; Kevin Crowell; Gordon Slys; Matthew Monroe; Gordon Anderson; Richard D. Smith; Battelle - PNNL, Richland, WA
- WP 377 **LC-IMS-MS Feature Finder: Detecting Multidimensional Features in IMS-TOF MS Data**; Kevin Crowell; Anuj Shah; Gordon Slys; Brian Lamarche; Da Meng; Erin Baker; Matthew Monroe; Gordon Anderson; Richard D. Smith; Battelle - Pacific Northwest National Laboratory, Richland, WA
- WP 378 **Improvement and Application of LC/MS Information for Calibrating Mass Deviations in Experimental Data in Shotgun Proteomics**; Xinjian Yan; Qian Dong; Dmitrii Tchekhovskoi; Paul Rudnick; Stephen Stein; NIST, Gaithersburg, MD
- WP 379 **Effects of Spectral Count Limits In Multidimensional LC-MS Replicate Data Set Analyses**; Mike Scott; Max Chang; Sherry Niessen; John Yates III; Bruce Torbett; The Scripps Research Institute, La Jolla, CA
- WP 380 **Real-Time Peptide Identification and Adaptive Peak Selection in Tandem Mass Spectrometry**; Benjamin Diamant¹; William Noble¹; ¹University of Washington, Seattle, WA
- WP 381 **RTCalc and RTCatalog: Open-Source Software Tools for Prediction and Cataloging of Sequence Specific Retentions of Peptides on Liquid Chromatography Systems**; David Shteynberg¹; Eric Deutsch¹; Caroline S. Chu¹; Ulrike Kusebauch¹; Jeff Stevens¹; Zhi Sun¹; Kristian E. Swearingen¹; Henry H. Lam²; Robert Moritz¹; ¹Institute for Systems Biology, Seattle, WA; ²Hong Kong University of Science, Clear Water Bay, Hong Kong
- WP 382 **Generation of a Virtual 2D Gel by Direct MALDI Analysis of an IEF Gel**; Matthew Olson¹; Alfred L. Yergey²; Rachel O. Loo³; ¹Johns Hopkins Hospital, Baltimore, MD; ²NIH, Columbia, MD; ³UCLA, Los Angeles, CA
- WP 383 **A New Retention Time Determination Method and Multiple Filters to Enhance Label-free Quantification using Peptide Intensity in LC-MS/MS**; Xianyin Lai¹; Lianshui Wang²; Haixu Tang²; Frank Witzmann¹; ¹IU School of Medicine, Indianapolis, IN; ²Indiana University, Bloomington, IN
- WP 384 **A Novel Algorithm for Peak Alignment and Multivariate Analysis Applied to Simultaneous Polarity Switching LC/MS/MS Analysis**; Mitsuhiro Kanazawa¹; Hisae Anyoji¹; Jun Watanabe²; Junko Iida²; ¹Reifycs Inc, Tokyo, Japan; ²Shimadzu Corporation, Kyoto, Japan
- WP 385 **Retrieval and Analysis of Isoform-specific Protein Information from Public Data Repositories Provides Insights into Biological Complexity**; Chengcheng Zhang; Juergen Kast; University of British Columbia, Vancouver, Canada
- WP 386 **Concurrent Quantification of Ganciclovir, Its Valine-Valine and Glycine-Valine Diester Dipeptide Prodrugs in Ocular Matrices and Enzyme Degradations by QTRAP LC-MS/MS**; Ravinder Earla; Rajya Lakshmi Earla; Ashim K. Mitra; University of Missouri-Kansas City, Kansas City, MO
- WP 387 **Implication of Universal Processor for Differential Quantitative Proteomics Analysis**; Wei-Hung Chang^{1,2}; Chih-Yu Lin¹; Wen-Shyong Tzou²; Yet-Ran Chen^{1,2}; ¹ABRC, Academia Sinica, Taipei, Taiwan; ²Institute of Bioscience and Biotechnology, NTOU, Keelung, Taiwan
- WP 388 **Improvement of T3PQ (Top 3 Protein Quantification) Method for Label-free Relative and Absolute Quantification Analysis**; Bernd Roschitzki¹; Claudia Fortes¹; Asa Wahlander¹; Paolo Nanni¹; Christian Panse¹; Simon Barkow-Oesterreicher¹; Jonas Grossmann¹; Dorothea Rutishauser²; Ralph Schlapbach¹; ¹Functional Genomics Center, Zurich, Switzerland; ²Karolinska Institutet, Stockholm, Sweden
- WP 389 **Abacus: A Tool for Extracting and Processing Spectral Count Data for Label-free Quantitative Proteomic Analysis**; Damian Fermin; Venkatesha Basur; Anastasia K. Yocum; Alexey Nesvizhskii; University of Michigan, Pathology Department, Ann Arbor, MI
- WP 390 **Assessment of Proteome Coverage Achieved using Super-SILAC Mix to Quantify the Human Tissue Proteome**; Lik Wee Lee; Jacob Kennedy; Haizhen Zhang; Richard Ivey; Jeffrey Whiteaker; Chenwei Lin; Amanda Paulovich; Fred Hutchinson Cancer Research Center, Seattle, WA
- WP 391 **Characterization of N-Acetyltryptophan Degradation Products in Human Serum Albumin Solutions and Development of an Automated HPLC-MS Method for Their Quantitation**; Ligiong Fang; Peifeng Hu; Rajesh Parti; Baxter Healthcare Corporation, Round Lake, IL
- WP 392 **Effects of Normalization on Quantification of Isotopically Labeled Proteins**; D. Brent Weatherly^{1,2}; Archer D Smith IV²; Arthur Nuccio²; Caroline Watson¹; Melissa Stoudemayer¹; Dominic Giordano¹; Gordon Robbins¹; Prabhjit Kaur³; Joshua S Sharp¹; James A Atwood III²; Amrita K Cheema³; Jon Amster¹; Ron Orlando¹; ¹University of Georgia, Athens, GA; ²NuSep, Inc, Bogart, GA; ³Georgetown University Medical Center, Washington, DC
- WP 393 **Computational Approaches for Analyzing Isotopically Labeled Samples**; Archer Smith IV¹; Natalie Kolawa²; Michael J Sweredoski²; Duc Dong³; Laura Donovan³; Allan Levey³; James Lah³; Yair Gozal³; Marla Gearing³; Junmin Peng³; Nicholas Seyfried³; Robert LJ Graham²; James A Atwood III¹; Ron Orlando⁴; D Brent Weatherly^{1,4}; ¹NuSep, Athens, GA; ²Caltech, Pasadena, CA; ³Emory University, Atlanta, GA; ⁴University of Georgia, Athens, GA
- WP 394 **Increasing the Precision of Quantitative Proteomics using iTRAQ**; Ashoka D. Polpitiya;

- Tony Tegeler; Jian Liu; Konstantinos Petritis; *Translational Genomics Research Institute, Phoenix, AZ*
- WP 395 **Using MS/MS Total Ion Current (TIC) Quantification in Scaffold 3 Software - Comparison to Spectral Counting;** Xuemei Yang¹; Meghana Kulkarni³; Susanne Breitkopf¹; Xinnong Jiang¹; Jeff Engelman⁴; Brian Searle²; John M Asara¹; ¹Beth Israel Deaconess Medical Center, Boston, MA; ²Proteome Software, Inc., Portland, OR; ³Harvard Medical School, Boston, MA; ⁴Massachusetts General Hospital, Boston, MA
- WP 396 **Quantifying the Effects of Ionizing Radiation and Radioprotectors on Immune Cells using OFFGeLC-MS^E;** Jonathan Erde¹; A. Jimmy Ytterberg¹; Shareef A. Nahas²; Richard A. Gatti²; Joseph A. Loo¹; ¹UCLA Department of Chemistry and Biochemistry, Los Angeles, CA; ²UCLA School of Medicine, Los Angeles, CA
- WP 397 **Feature Decomposition from LC-MS Data using Non-negative Matrix Factorization;** Yong Fuga Li¹; Randy J. Arnold²; Predrag Radivojac¹; Haixu Tang¹; ¹Informatics and Computing, Indiana University, Bloomington, IN; ²Department of Chemistry, Indiana University, Bloomington, IN
- WP 398 **Quanti: Program for Highly Reproducible Label-free Quantification of FTMS Proteomics Data;** Yaroslav Lyutvinskiy; Hongqian Yang; Roman Zubarev; *Karolinska Institutet, MBB, Stockholm, Sweden*
- WP 399 **Optimization of Supervised Classification Techniques using an Improved Library of Biologically Relevant MALDI Spectra;** Josue Alfaro¹; Joseph Salisbury¹; Nathalie Agar²; Jeffrey Agar¹; ¹Brandeis University, Waltham, MA; ²Harvard Medical School, Neurosurgery, Boston, MA
- WP 400 **Enhancing Accuracy and Depth-of-Coverage of Isotopically Labeled Samples using Precursor and Product Ion Responses from Data Independent Analyses (DIA);** Roy Martin; Michael Nold; Scott Geromanos; *Waters Corporation, Milford, MA*
- WP 401 **Cut Once, Measure Twice - Fully Automated Quantitative Quality Control of Discovery Compounds Using Combined NMR and LCMS Techniques;** Ke Ruan²; Mark Gianino¹; Muhammad Alimuddin¹; Jason Ewanicki¹; Bob Albrecht³; Wei Wang¹; ¹Pfizer Worldwide R&D La Jolla Laboratory, San Diego, CA; ²University of Science & Technology of China, Hefei, China; ³Protasis Corp., Marlborough, MA
- WP 402 **MRMutation, Web-based Software, that Assesses Mass Space Specificity in the Quantitative Analysis Of Peptides;** Stephen Barnes; Chandrahas Narne; Mikako Kawai; Chiquito Crasto; *University of Alabama at Birmingham, Birmingham, AL*
- WP 403 **LC/MS Alignment Based on Bayesian Analysis and Hypothesis Testing;** Jian Cui; Xuepo Ma; Jianqiu Zhang; *Dept. of ECE, University of Texas at San Antonio, San Antonio, TX*
- WP 404 **pQuant: A Suite of Algorithms for Full MS-based, Proteome-wide Quantification with an Emphasis on Quantitation Accuracy and Its Evaluation;** Chao Liu¹; Chun-Qing Song²; Zuo-Fei Yuan¹; Hao Chi¹; Yan Fu¹; Le-Heng Wang¹; Sheng-Bo Fan¹; Rui-Xiang Sun¹; Meng-Qiu Dong²; Si-Min He¹; ¹Institute of Computing Technology, CAS, Beijing, China; ²National Institute of Biological Sciences, Beijing, Beijing, China
- WP 405 **The Nuclear Proteome of Sink and Source Regions of Developing Maize Leaves; A Quantitative Analysis Based on Spectral Counting;** Anton Poliakov¹; Yukari Asakura¹; Lalit Ponnala²; Klaas J. Van Wijk¹; ¹Department of Plant Biology, Cornell University, Ithaca, NY; ²Computational Biology Unit, Cornell University, Ithaca, NY
- WP 406 **Quari: A New Computer Program for Automated Analysis of Large-scale Isobaric Tags-based Quantitative Proteomics Data;** Guanghui Wang; Marjan Gucck; *NIH, Bethesda, MD*
- IMAGING MS: SMALL MOLECULES; 407 - 429**
- WP 407 **New Insights into Rembrandt's Unknown Techniques using High Spatial Resolution Cluster-TOF-SIMS Imaging;** Pascale Richardin; Sophie Cersoy; Jana Sanyova²; Olivier Laprevote³; ⁴Philippe Walter¹; Alain Brunelle³; ¹Centre de Recherche et de Restauration des Musées, Paris, France; ²Institut Royal du Patrimoine Artistique, KIK-IRPA, Brussels, Belgium; ³Centre de Recherche de Gif, ICSN, Gif-sur-Yvette, France; ⁴Université Paris Descartes, Paris, France
- WP 408 **TOF-SIMS Differentiation of Epicuticular Wax Components on Arabidopsis Organs;** John Hammond¹; Gregory Fisher¹; Reinhard Jetter²; ¹Physical Electronics, Chanhassen, MN; ²University of British Columbia, Vancouver, British Columbia, Canada
- WP 409 **A Tandem Mass Spectrometric Imaging Methodology for Angiotensin 1-7 Peptides;** Robert F. Menger¹; Amrisha Verma²; Qihong Li²; Timothy J. Garrett³; Richard A. Yost¹; ¹Department of Chemistry, University of Florida, Gainesville, FL; ²Department of Ophthalmology, University of Florida, Gainesville, FL; ³Department of Medicine, University of Florida, Gainesville, FL
- WP 410 **MALDI-IMS Signal Enhancement using pH-Controlled Tissue Treatment Protocol;** Mohammadreza Shariatgorji; Patrik Kallback; Nadine Mascini; Per E. Andren; *Uppsala University, Uppsala, Sweden*
- WP 411 **Towards MALDI-MSI of Xanthophylls in Retinal Tissue for Comparison with Non-Invasive Multispectral Imaging;** Andrew Palmer; Iain Styles; Josephine Bunch; *University of Birmingham, Birmingham, UK*
- WP 412 **"Tailor made" Reactive Matrices for Improved Sensitivity and Detection of Carbonyl Containing Compounds in-situ for MALDI-MS Imaging;** Bryn Flinders¹; Peter Marshall²; Josie Morrell²; Lisa Ranshaw²; M. Akram Khan¹; Malcolm Clench¹; ¹Sheffield Hallam University, Sheffield, UK; ²GlaxoSmithKline, Stevenage, UK
- WP 413 **Imaging Mass Spectrometry Based Approaches to the Localisation of Drugs and Drug Metabolites in Animal Tissue;** Eleanor O. Blatherwick¹; Kathryn J. Pickup²; Sunil Sarda²; Timothy Schulz-Utermoehli²; Ian D. Wilson²; Daniel J. Weston³; James H. Scrivens¹; ¹University of Warwick, Coventry, UK; ²AstraZeneca R&D

- WP 414 *Alderley Park, Cheshire, UK; ³AstraZeneca R&D Charnwood, Loughborough, UK*
Visualizing the Vaginal Distribution of Tenofovir by Imaging Mass Spectrometry: Quantitation of Tenofovir Biodistribution in Rabbit Vaginal Tissue; Michelle L. Reyzer¹; Jamie Allen¹; Patrick Kiser²; Richard M. Caprioli¹; ¹Vanderbilt University, Nashville, TN; ²University of Utah, Salt Lake City, UT
- WP 415 **Drug Distribution in Pancreatic Cancer Xenografts by MALDI Imaging following Single and Combination Therapy;** Andrew J. Bessire^{1,2}; Stacey R. Oppenheimer^{1,2}; David J. Shields^{1,2}; Justine Lam^{1,2}; Mary Spilker^{1,2}; ¹Pfizer, Inc., Groton, CT; ²Pfizer, Inc., La Jolla, CA
- WP 416 **Spatial Profiling of Anticancer Drug in Brain Tumor Tissue using MALDI Mass Spectrometric Imaging;** Dodge L. Baluya; Jyoti Sharma; James M. Gallo; Rong Wang; *Mount Sinai School of Medicine, New York, NY*
- WP 417 **Visualization of Cellular Energy Status and Oxidative Stress by using Multiple Metabolite Ions in Imaging Mass Spectrometry;** Yuki Sugiura^{1,2}; Mitsutoshi Setou¹; *Hamamatsu University School of Medicine, Hamamatsu, Japan; ²Keio University, Tokyo, Japan*
- WP 418 **Accurate Mass Drug Imaging for Metabolite Distribution: Extra Information with Little Extra Effort;** Cristine Quiason¹; Katherine A. Kellersberger²; Michael Easterling²; Shannon Cornett²; Brian Dean¹; Sheerin Shahidi-Latham¹; ¹Genentech Inc., South San Francisco, CA; ²Bruker Daltonics, Fremont, CA
- WP 419 **A Comparative Study of DESI and MALDI for the Imaging of Pharmaceuticals in Tissue;** Stacey R. Oppenheimer¹; Justin M. Wiseman²; Andrew J. Bessire¹; Joseph H. Kennedy²; ¹Pfizer, Inc., Groton, CT; ²Prosolia, Inc., Indianapolis, IN
- WP 420 **MALDI Imaging of Fungal Interactions: A Tool to Facilitate the Isolation of Fungal Inhibitors from Marine Bacteria;** Wilna Moree¹; Xiling Zhao¹; Marcelino Gutierrez-Guevara²; Pieter Dorrestein¹; ¹UCSD, Skaggs School of Pharmacy, La Jolla, CA; ²INDICASAT, Clayton, Panama
- WP 421 **Microbial Metabolic Exchange within a Zebrafish Host;** Samantha Mascuch; *UC San Diego, La Jolla, CA*
- WP 422 **Examination of Titanium Dioxide Nanoparticle Absorption into Skin by Laser Desorption Ionisation Mass Spectrometry Imaging;** Rajvir Wadhawan; Malcolm Clench; *Sheffield Hallam University, Sheffield, UK*
- WP 423 **Simultaneous Imaging Low Molecular Weight Metabolites in Mouse Brain Using TiO₂ Nanoparticles in Nano-PALDI-IMS;** Kamlesh Shrivastava; Takahiro Hayasaka; Yuki Sugiura; Mitsutoshi Setou; *Hamamatsu University School of Medicine, Hamamatsu, Japan*
- WP 424 **MALDI MS Imaging of Cereals;** Tabiwang Arrey¹; Maria C. Prieto Conaway²; Huy Bui²; Thomas Moehring¹; Kerstin Strupat¹; ¹Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany; ²Thermo Fisher Scientific, San Jose, CA
- WP 425 **Single-Cell Level MALDI Imaging MS of Metabolites in Maize, a C₄ Photosynthesis Plant;** Andrew Korte^{1,2}; Ji Hyun Jun^{1,2}; Marna Nelson¹; Edward Yeung²; Young Jin Lee^{1,2}; Basil Nikolau¹; ¹Iowa State University, Ames, IA; ²Ames Laboratory US Dept. of Energy, Ames, IA
- WP 426 **Probing Medicinal Plant Phytochemical Factories through *in situ* MALDI Tissue Imaging using Quadrupole Ion Mobility Time-of-Flight Mass Spectrometry;** David Gang¹; Laurence Davin¹; Mwafaq Ibdah¹; B. Markus Lange¹; Norman Lewis¹; Glenn Turner¹; Henry Shion²; Greg Witkop²; Don Harris²; Alan Millar²; ¹Washington State University, Pullman, WA; ²Waters Corp., Milford, MA
- WP 427 **Indirect DESI Imaging of Secondary Metabolites in Plant Material;** Christian Janfelt; Janina Thunig; Bin Li; Steen H. Hansen; *University of Copenhagen, Copenhagen, Denmark*
- WP 428 **Imaging Bacterial Biofilms using Laser Desorption Postionization Mass Spectroscopy: Comparing 10.5 eV to 7.87 eV Photoionization;** Chhavi Bhardwaj¹; Jerry F. Moore³; Gerald L. Gasper¹; Yang Cui¹; Hans Bernstein²; Ross P. Carlson²; Luke Hanley¹; ¹Univ. of Illinois, Chicago, Chicago, IL; ²Dept. of Chemical and Biological Engineering, Center for Biofilm Engineering, Montana State Uni., Bozeman, MT; ³MassThink, Naperville, IL
- WP 429 **MALDI MSI, A New Tool to Understand Marine Life: An Example of the Study of a Chemical Defense Mechanism;** Séverine Vandyck¹; Patrick Flammang¹; Céline Meriaux²; Michel Salzet^{2,3}; Isabelle Fournier^{2,3}; Maxence Wisztorski²; ¹Laboratoire de Biologie marine, Université de Mons, Mons, Belgium; ²FABMS, Université Lille 1, Villeneuve d'Ascq, France; ³Imbiotech, Villeneuve d'Ascq, France
- IMAGING MS: DISEASE MARKERS; 430 - 442**
- WP 430 **MALDI Imaging Mass Spectrometry Reveals Elevated Nigral Levels of Dynorphin Peptides in L-DOPA-induced Dyskinesia;** Anna Karlsson¹; Jörg Hanrieder¹; Maria Fälth²; Jonas Bergquist³; Malin Andersson¹; ¹Uppsala University, Neurotoxicology, Uppsala, Sweden; ²German Cancer Research Center, Heidelberg, Germany; ³Uppsala University, Analytical chemistry, Uppsala, Sweden
- WP 431 **Time Dependant Lipid Profile Changes in Controlled Cortical Impact Rat Model;** Jeremy Post¹; Shelley N Jackson¹; Benoit Colsch¹; Gregg Schieffer¹; Gregory Bull²; Brian Cox²; Amina S. Woods¹; ¹NIH/NIDA-IRP, Baltimore, MD; ²Uniformed Services University of Health Sciences, Bethesda, MD
- WP 432 **MALDI-MSI Analysis of Lipidomic and Proteomic Responses of Human Skin to Sensitizing and Irritant Chemicals, Utilising Ion Mobility Technology;** Philippa Hart¹; Emmanuelle Claude²; Simona Francese¹; M. Nicola Woodroffe¹; Malcolm Clench¹; ¹Sheffield Hallam University, Sheffield, UK; ²Waters corporation, Manchester, UK
- WP 433 **Mass Spectrometry Imaging of Brain Tissue from Patients with Alzheimer's Disease;** Andras Kiss^{1,3}; Anna Carrano²; Donald Smith¹; Saskia M. van der Vies²; Ron M.A. Heeren^{1,3}; ¹FOM Institute AMOLF, Amsterdam, The Netherlands; ²VU University Medical Center, Amsterdam, The Netherlands; ³Netherlands Proteomics Center, Utrecht, The Netherlands

- WP 434 **Localization and Identification of Biomarkers in Human Cartilage by Maldi Imaging Mass Spectrometry**; Berta Cillero Pastor¹; Francisco J. Blanco García²; Ron M.A. Heeren¹; ¹FOM Institute AMOLF, Amsterdam, The Netherlands; ²INIBIC-CHUAC, A Coruña, Spain
- WP 435 **MALDI Mass Spectrometry Imaging - A Prospective Tool for Tumor Border Region Identification**; Brian Flatley^{1,2}; Elizabeth Johnson³; Fawaz Musa³; Peter Malone²; Rainer Cramer¹; ¹University of Reading, Reading, UK; ²Harold Hopkins Department of Urology, Royal Berkshire NHS Foundation Trust Hospital, Reading, UK; ³Department of Pathology, Royal Berkshire NHS Foundation Trust Hospital, Reading, UK
- WP 436 **Differentiation of Diagnostically Challenging Tumors in Multiple Patient Samples Using Multiplex Multivariate Agreement Analysis**; Emrys A. Jones¹; Nicole Schmitz²; Cathelijn Waaijer²; Alexandra van Remoortere¹; René J.M. van Zeijl¹; André M. Deelder¹; Judith V.M.G. Bovée²; Liam A. McDonnell¹; ¹Parasitology, Leiden University Medical Center, Leiden, the Netherlands; ²Pathology, Leiden University Medical Center, Leiden, the Netherlands
- WP 437 **Molecular Diagnosis of Metastatic Potential in Human Soft Tissue Sarcoma**; Erin H. Seeley; Ginger E. Holt; Richard M. Caprioli; *Vanderbilt University, Nashville, TN*
- WP 438 **Visualizing Breast Cancer Heterogeneity Using Nanostructure-Initiator Mass Spectrometry (NIMS)**; Wolfgang Reindl; Ben Bowen; Trent Northen; *Lawrence Berkeley National Lab, Berkeley, CA*
- WP 439 **Microscopic MALDI Imaging Revealed Heterogeneous Distribution of Metabolites in and Around Hepatic Metastasis of Human Colon Cancer Xenograft in Mice**; Akiko Kubo¹; Mitsuyo Ohmura¹; Takako Hishiki¹; Masatoshi Wakui¹; Mitsuru Murata¹; Mitsutoshi Setou²; Makoto Suematsu¹; ¹Keio University, Tokyo, Japan; ²Hamamatsu University School of Medicine, Shizuoka, Japan
- WP 440 **An Imaging Approach to Investigate the Therapeutic Effects of Decoy Oligonucleotide Drugs in Cancer**; Rita Casadonte¹; Joseph M. Amann¹; Jennifer R. Grandis²; David P. Carbone¹; Richard M. Caprioli¹; ¹Vanderbilt University, Nashville, TN; ²University of Pittsburgh, Pittsburgh, PA
- WP 441 **Analysis of Glomerular Proteins By High Spatial Resolution MALDI Imaging Mass Spectrometry**; Kerri Grove; Paul Voziyan; Roberto Vanacore; Raymond Harris; Billy Hudson; Richard M. Caprioli; *Vanderbilt University, Nashville, TN*
- WP 442 **Human Glioma Classification using Desorption Electrospray Ionization Mass Spectrometry Imaging and Statistical Analysis**; Livia S. Eberlin¹; Allison L. Dill¹; R. Graham Cooks¹; Isaiah Norton³; Sandro Santagata²; Nathalie Y. R. Agar³; ¹Purdue University, West Lafayette, IN; ²Harvard Medical School, Pathology, Boston, MA; ³Harvard Medical School, Neurosurgery, Boston, MA
- IMAGING MS: LARGE MOLECULES; 443 - 455**
- WP 443 **In-situ Tryptic Digestion of Bacterial Biofilms for Protein Identification and Imaging by MALDI Mass Spectrometry**; Melvin Blaze M.T.; Berdan Sevinc; Luke Hanley; *University of Illinois at Chicago, Chemistry, Chicago, IL*
- WP 444 **MALDI-MSI to Investigate Treatment Response in Tumour Vascular Targeted Therapy**; Laura Cole¹; Marie Claude Djidja²; Joanne Bluff³; Emmanuelle Claude⁴; Vikki Carolan¹; Martyn Paley³; Gillian Tozer³; Malcolm Clench¹; ¹Sheffield Hallam University, BMRC, Sheffield, UK; ²The Institute of Cancer Research, UK, London, UK; ³University of Sheffield, Sheffield, UK; ⁴Waters Corporation UK, Manchester, UK
- WP 445 **Profiling of α-Crystallin Distribution in Cornea by MALDI Mass Spectrometry**; Yuntao Zhang; Yasuaki Hiromasa; Takeo Iwamoto; John Tomich; Gary Conrad; *Kansas State University, Manhattan, KS*
- WP 446 **Imaging Rheumatoid Arthritis: Novel MS Investigation of an Old Disease**; Sanallah Chughtai; Kamila Chughtai; Andras Kiss; Berta Cillero Pastor; Luke MacAleese; Ron M.A. Heeren; *AMOLF, Amsterdam, Netherlands*
- WP 447 **Investigation of Tuberculosis Infection in Monkeys: Evaluation of Drug, Protein, and Lipid Localization in Tissue Samples using Imaging Mass Spectrometry**; M. Lisa Manier¹; Michelle L. Reyzer¹; JoAnne L. Flynn²; Clifton E. Barry, III³; Richard M. Caprioli⁴; ¹Vanderbilt University, Nashville, TN; ²University of Pittsburgh School of Medicine, Pittsburgh, PA; ³NIAID/NIH, Bethesda, MD; ⁴Vanderbilt Univ Sch of Med, Nashville, TN
- WP 448 **Spatial Detection of Phospholipids in Human Pressure Ulcers by Imaging Mass Spectrometry**; Domenico Taverna¹; Lillian B Nanney⁴; Alonda C Pollins⁴; Jeffrey M Spraggins^{2,3}; Giovanni Sindona¹; Richard M Caprioli^{2,3}; ¹Universita' della Calabria, Dep. of Chemistry, Arcavacata Di Rende, Italy; ²Vanderbilt University, Dep. of Biochemistry, Nashville, TN; ³Vanderbilt University, MSRC, Nashville, TN; ⁴Vanderbilt University, Plastic Surgery, Nashville, TN
- WP 449 **Evaluation of Dithranol as a MALDI Matrix for Tissue Imaging of Endogenous Metabolites by Fourier-Transform Mass Spectrometry**; Cuong H. Le^{1,2}; Jun Han^{1,2}; Christoph H. Borchers^{1,2}; ¹University of Victoria-Genome BC Proteomics Centre, Victoria, BC, Canada; ²Department of Biochemistry & Microbiology, University of Victoria, Victoria, BC, Canada
- WP 450 **Distinct Distribution of Hydroxylated and Non-hydroxylated Sulfatide in Human Cerebral Cortex**; Dai Yuuki¹; Yuki Sugiura²; Nobuhiro Zaima²; Hiroyasu Akatsu³; Masami Fujiwara¹; Keikichi Sugiyama^{1,4}; Mitsutoshi Setou²; ¹Lion Corporation, Tokyo, Japan; ²Hamamatsu school of medicine, Hamamatsu, Japan; ³Fukushima Hospital, Toyohashi, Japan; ⁴Ritsumeikan University, Kyoto, Japan
- WP 451 **Direct Visualization of Heterogeneous Distribution of Lipid Molecules in Cotton Embryos by MALDI-LTQ-Orbitrap**; Jessica Lim¹; Andrew Korte^{1,2}; Purnima Neogi³; Patrick Horn³; Kent Chapman³; Young Jin Lee^{1,2}; ¹Iowa State

- University, Ames, IA; ²Ames Laboratory-USDOE, Ames, IA; ³University of North Texas, Denton, TX
- WP 452 **Lipid Imaging by DESI as a Tool to Address the Complexity of Ovarian Metabolism;** Christina Ferreira; Livia S Eberlin; R. Graham Cooks; *Purdue University, West Lafayette, IN*
- WP 453 **Mass Spectrometry of Archaeal Lipids and Lignin Oligomers;** Lynelle K Takahashi^{1,2}; Oleg Kostko²; Amir Golan²; Stephen R Leone^{1,2}; Hoi-Ying Holman²; Musahid Ahmed²; ¹UC Berkeley, Berkeley, CA; ²LBNL, Berkeley, CA
- WP 454 **Creating a Molecular Map of Swarming Bacteria with Imaging Mass Spectrometry;** Jane Yang; Rachel Smith; Kit Pogliano; Pieter Dorrestein; *UCSD, La Jolla, CA*
- WP 455 **Mapping of Signaling Molecules within the Oral Microbiome in a System-Wide Fashion;** Jessica Karr; Pieter Dorrestein; *UCSD, La Jolla, CA*
- PEPTIDES: PTM IDENTIFICATION II; 456 - 476**
- WP 456 **Evaluation of a Nanospray Atmospheric Pressure - Electron Capture Dissociation (AP-ECD) Ionization Source for the Analysis of Post-Translational Modifications;** Davin Carter¹; Jason Rogalski¹; Damon Robb²; Michael Blades²; Juergen Kast¹; ¹University of BC - Biomedical Research Centre, Vancouver, Canada; ²University of British Columbia, Vancouver, BC
- WP 457 **Mass Spectrometric Method Development to Analyze Sequence and Structural Influences on Tyrosine Nitration Site Selectivity;** Kent Seeley; Stanley M. Stevens, Jr; *University of South Florida, Tampa, FL*
- WP 458 **Combined Isotopic and Isobaric Labeling Strategies for the Identification and Quantitation of 3-nitrotyrosine-modified Proteins;** Adam R. Evans; Renā A. S. Robinson; *University of Pittsburgh, Pittsburgh, PA*
- WP 459 **Confident Identification of 3-Nitrotyrosine Modifications Using an Experimentally Defined Set of Criteria;** Bensheng Li; Jason Held; Birgit Schilling; Steven Danielson; Bradford Gibson; *Buck Inst for Research on Aging, Novato, CA*
- WP 460 **Determination of S-nitrosylation Occupancy Rates Using cys-TMT Tags;** Angel Aponte^{1,3}; Mark Kohr^{2,3}; Elizabeth Murphy^{2,3}; Marjan Gucak^{1,3}; ¹Proteomics Core Facility, Bethesda, MD; ²Laboratory of Cardiac Physiology, Bethesda, MD; ³National Heart Lung and Blood, NIH, Bethesda, MD
- WP 461 **A Monoclonal Antibody Cocktail as an Enrichment Tool for Acetylome Analysis;** Patrick Shaw¹; Raghothama Chaerkady¹; Nancy Davidson²; Akhilesh Pandey¹; ¹Johns Hopkins University, Baltimore, MD; ²University of Pittsburgh Cancer Institute, Pittsburgh, PA
- WP 462 **A Mass Spectrometric Approach for Characterizing and Quantitating Acetylation Sites on the Mitochondrial Pyruvate Dehydrogenase Complex;** Salisha Hill; Kristie Lindsey Rose; Sarah Stuart; Joshua Fessel; James West; Charles R. Flynn; *Vanderbilt University, Nashville, TN*
- WP 463 **Lysine Acetyltransferase Substrate Discovery by *in vitro* Enzymatic Reactions and High Resolution Quantitative Acetylomics;** Alex Hebert; Derek Bailey; Justin Brumbaugh; Joshua J. Coon; *Univ of Wisconsin-Madison, Madison, WI*

- WP 464 **Novel Application of PROTOMAP and AQUA Approaches to Quantify Acetylated CheY, a Response Regulator in Chemotaxis of *Escherichia coli*;** Tevie Mehlman¹; Bassem Ziadeh¹; Gabriel Simon²; Atim Atte Enyenih³; Milana Fraiberg⁴; Michael Eisenbach⁴; Roman Zubarev³; Alla Shainskaya¹; ¹Biol MS Facility, Weizmann Institute of Science, Rehovot, Israel; ²Washington University in St. Louis, St. Louis, MO; ³Molecular Biometry Lab, Karolinska Institutet, Stockholm, Sweden; ⁴BiolChem Department, Weizmann Institute of Science, Rehovot, IL
- WP 465 **Development of Methods for Quantitation of Acetylated Peptides;** Matthew Rardin; Birgit Schilling; Jason Held; Bradford W. Gibson; *Buck Institute for Age Research, Novato, CA*
- WP 466 **Identification and Characterization of New α-N-methylated Proteins;** Qian Cai; *Riverside, CA*
- WP 467 **An Innovative Dual-enzyme and Dual-activation Strategy for Comprehensive and Accurate Characterization of Protein Arginine-methylation in *Trypanosoma brucei*;** Hao Wang; Jun Li; Jun Qu; *University at Buffalo SUNY, Buffalo, NY*
- WP 468 **Proteomics Mapping of Yeast RNA Polymerase II Post-translational Modifications and Investigating Their Biological Significance;** Sreenivasa Rao Ramisetty¹; Amber L Mosley; Michael Washburn¹; ¹Stowers Institute for Medical Research, Kansas City, MO; ²Indiana University School of Medicine, Department, Indianapolis, IN
- WP 469 **Bottom-up and Top-down Analysis of Post-translational Modifications in Myelin Basic Protein;** Chunchao Zhang; Robert Zand; Philip Andrews; *Univ. of Michigan, Ann Arbor, MI*
- WP 470 **Simultaneous Identification of Unmodified Tryptic Peptides and Phosphopeptides, Glycopeptides, and Deamidated Peptides by Electrostatic Repulsion-Hydrophilic Interaction Chromatography (ERLIC) and LC-MS/MS;** Piliang Hao¹; Jingru Qian¹; Wei Meng¹; Yan Ren¹; Andrew J. Alpert²; Siu Kwan Sze¹; ¹Nanyang Technological University, Singapore, Singapore; ²PolyLC Inc, Columbia, MD
- WP 471 **Analysis of Phosphorylated Neuropeptides by 3D-ERLIC-HILIC-RP Chromatography and ETD MS Detection - Evaluation of Separation and Detection Conditions;** Goran Mitulovic; Verena Tretter; *Medical University of Vienna, Vienna, Austria*
- WP 472 **MS-identified Phosphorylation Sites in Homer2 Regulate Binding to Metabotropic Glutamate Receptors;** Rob Helton¹; Santiago Farias¹; Karen K. Szumlinski²; Christine C. Wu³; ¹University of Colorado, Aurora, CO; ²University of California Santa Barbara, Santa Barbara, CA; ³University of Pittsburgh School of Medicine, Pittsburgh, PA
- WP 473 **Comparing and Contrasting Scanning and Fragmentation Methods for Analyzing the Phosphoproteome;** Chia-Feng Tsai¹; Pei-Yi Lin²; Chris Hughes³; Johannes PC Vissers³; James I Langridge³; Yu-Ju Chen^{1,2}; ¹National Taiwan University, Taipei, Taiwan; ²Academia Sinica, Taipei, Taiwan; ³Waters Corporation, Manchester, UK

- WP 474 **Vibrational and Ion-Electron Activation Methods for Negative Ion Mode MS/MS Analysis of Sulfopeptides;** Katherine E. Hersberger; Kristina Hakansson; *University of Michigan, Ann Arbor, MI*
- WP 475 **A Top-Down Proteomic Analysis of PTM Changes on Histones through Prostate Cancer Progression;** Lisabeth Hoffman¹; John Lapek²; Gregory Tomblin²; Alan Friedman¹; ¹*University of Rochester Medical Center, Rochester, NY*; ²*University of Rochester, Rochester, NY*
- WP 476 **Toward Comprehensive Unbiased Analysis of Histone Combinatorial PTMs in Human Centromeric Chromatin;** Aaron Bailey¹; Tatyana Panchenko²; Limin Liu¹; Todd Stukenberg¹; Ben Black²; Daniel Foltz¹; Jeffrey Shabanowitz¹; Donald Hunt¹; ¹*University of Virginia, Charlottesville, VA*; ²*University of Pennsylvania, Philadelphia, PA*
- PEPTIDES: FRAGMENTATION MECHANISMS; 477 - 504**
- WP 477 **α-C Bond Cleavage of the Peptide Backbone in MALDI In-source Decay using Salicylic Acid Derivative Matrices;** Daiki Asakawa; Mitsuo Takayama; *Yokohama City University, Yokohama, Japan*
- WP 478 **C-terminal Sequencing of Sodium Cationized FMOc Derivatized Peptides;** Alessandra L. Ferzoco; Gary L. Glish; *University of North Carolina, Chapel Hill, NC*
- WP 479 **Investigation of Mass Spectrometry Signal Yields for Phenylisothiocyanate Derivatization of Peptides;** Pamela Ann Diego; Xudong Yao; *University of Connecticut, Storrs Mansfield, CT*
- WP 480 **Disulfide Bond Scrambling in CID of [M+OH+nH]ⁿ⁺ Ions and ETD of [M+nH]ⁿ⁺ Ions Formed from Peptides Containing Two Disulfide Bonds;** Xiaoxiao Ma^{1,2}; Kirt Durand²; Chelsea Plummer²; Xinrong Zhang¹; Yu Xia²; ¹*Tsinghua University, Beijing, China*; ²*Purdue University, West Lafayette, IN*
- WP 481 **Studying Peptide Fragmentation Differences Based on Cysteine Modifications on a Quadrupole-linear Ion Trap Instrument;** Souade Ben Haddou; André Leblanc; Tze Chieh Shiao; René Roy; Lekha Sleno; *UQAM, Montreal, Canada*
- WP 482 **Facile Hydrogen Atom Migration within Cationic Radical Peptides: Arginine Facilitated Isomerization and Radical-Induced Dissociation;** Tao Song¹; Chun Ming Dominic Ng¹; Minjie Xu¹; Chi-Kit Siu²; Ivan K. Chu¹; ¹*The University of Hong Kong, Hong Kong, China*; ²*City University of Hong Kong, Hong Kong, China*
- WP 483 **Effect of Gas Phase Structure on Radical Migration and Subsequent Fragmentation in Peptides;** Xing Zhang; Ryan R. Julian; *University of California, Riverside, CA*
- WP 484 **An Arginine Residue Can Control the Side-chain Cleavage of Glycylarginyl-leucine/-isoleucine Radical Cations by Facilitating α-Radical Migrations;** Chun Ming Dominic Ng¹; Qiang Hao^{1,2}; Quan Quan¹; Song Tao¹; Chi-Kit Siu²; Ivan Keung Chu¹; ¹*The University of Hong Kong, Hong Kong, China*; ²*City University of Hong Kong, Hong Kong, China*
- WP 485 **Roles of Radicals and Charges in the Neutral H₃PO₄ Loss of Molecular Phosphorylated Peptide Radical Cations;** Quan Quan¹; Ricky P. W. Kong¹; Shui-On Siu¹; Cheuk-Kuen Lai¹; Dominic C. M. Ng¹; Qiang Hao²; Chi-Kit Siu²; Ivan K. Chu¹; ¹*The University of Hong Kong, Hong Kong*; ²*City University of Hong Kong, Hong Kong*
- WP 486 **Radical a-ions in ECD – An Untold Story;** Roman Zubarev¹; David Good¹; Mikhail Savitski²; ¹*Karolinska Institutet, Stockholm, Sweden*; ²*Cellzome, Heidelberg, Germany*
- WP 487 **The Effects of Basic Residues of Peptides on Electron-transfer Dissociation Mass Spectrometry;** Changgen Feng; Carolyn J. Cassidy; *University of Alabama, Tuscaloosa, AL*
- WP 488 **Influence of Peptide Structure on the ECD Fragmentation Pathways;** Renjie Hui; Guillaume van der Rest; Gilles Frison; Julia Chamot-Rooke; *DCMR - Ecole Polytechnique, Palaiseau, France*
- WP 489 **Electron Transfer Dissociation of Transition Metal-peptide Complexes;** Heather M. Watson; Carolyn J. Cassidy; *University of Alabama, Tuscaloosa, AL*
- WP 490 **From z_n⁺ to z_n^{m+}: Recruiting Hydrogens to the C-terminus in Electron Transfer Dissociation;** Samantha Bokatzian-Johnson; Carolyn J. Cassidy; *University of Alabama, Tuscaloosa, AL*
- WP 491 **Electron Capture Dissociation and Collision-induced Dissociation Mass Spectrometry of S-nitrosylated Peptides;** Andrew Jones; Helen Cooper; *University of Birmingham, Birmingham, UK*
- WP 492 **Monte Carlo / RRKM / Classical Trajectories Modeling of Collisional Excitation and Dissociation of Protonated AGA in Tandem Mass Spectrometer;** Vadim Knyazev^{1,2}; Stephen Stein¹; ¹*NIST, Gaithersburg, MD*; ²*The Catholic University of America, Washington, DC*
- WP 493 **On the Mechanism of Loss of Formamide from a₂ Ions and Loss of Methyl Mercaptan from a₂ Ions Containing Methionine;** Yamil Simon; Pedatsur Neta; Xiaoyu Yang; Lisa E. Kilpatrick; Stephen E. Stein; *NIST, Gaithersburg, MD*
- WP 494 **Low Energy CID Fragmentation Channels of Proline-containing Peptides;** Chaminda M. Gamage; Kevin Kmiec; Christopher Barlow; David H. Russell; *Texas A&M University, College Station, TX*
- WP 495 **Fragmentation of Proline Containing Peptides via High Energy Collision Induced Dissociation and 193-nm Photofragmentation TOF-TOF Mass Spectrometry;** Kevin Kmiec; Chaminda M. Gamage; David H. Russell; *Texas A&M University, College Station, TX*
- WP 496 **A Mechanism of the c Ions Formation Involving the "Gly-ization" of the Thr Side-chain in Melittin in MALDI-QIT-TOF MS;** Kazumi Saikusa^{1,2}; Susumu Yoshioka¹; Shunsuke Izumi¹; ¹*Graduate school of science, Hiroshima University, Higashihiroshima, Japan*; ²*Yokohama City University, Yokohama, Japan*
- WP 497 **Sequence Dependence of Peptide Rearrangement During Collision Induced Dissociation in a Quadrupole Ion Trap;** Sandra Spencer¹; Alessandra Ferzoco¹; Meredith Arnold¹; Jeffrey Steill²; Jos Oomens²; Gary L. Glish¹; ¹*University of North Carolina, Chapel Hill, NC*; ²*FOM Rijnhuizen, Nieuwegein, Netherlands*

- WP 498 **Complementary Methods to Probe the Chemical Structures of CID Product Ions: HDX & IRMPD Spectroscopy;** Marcus Tirado¹; Xian Chen¹; Alfred Yeung¹; Jeffrey Steill²; Jos Oomens²; Nicolas Polfer¹; ¹University of Florida, Gainesville, FL; ²FOM Rijnhuizen, Nieuwegein, Netherlands
- WP 499 **Calculations and Measurements of Ion Intensity Relationships in Mass Spectra of Short Peptides;** Oleg Obolensky¹; Wells W. Wu²; Rong-Fong Shen²; Yi-Kuo Yu¹; ¹National Center for Biotechnology Information, NLM, Bethesda, MD; ²NIA/NIH, Baltimore, MD
- WP 500 **Quantum Mechanical Analysis of the Reductive Stabilization of 4-Hydroxynonenal Protein Modification Characterized by Nano-LC-MS/MS;** Kristofer Fritz; Jose Gomez; Dennis Petersen; University of Colorado Denver, Aurora, CO
- WP 501 **Fragment Ions in CID, HCD and PQD MSMS Spectra of Doubly Charged Penta-peptides, versus Theoretical Calculations of Their Relative Intensities;** Tibor Pechan; Steven Gwaltney; Mississippi State University, Mississippi State, MS
- WP 502 **Influence of Side Chain Chemistry on Fragmentation Pathways of b₃-45 Ions;** Meredith Arnold; Alessandra Ferzoco; Sandra Spencer; Gary L. Glish; University of North Carolina, Chapel Hill, NC
- WP 503 **Influence of Basic and Acidic Residues on b₂⁺ Peptide Fragment Ion Structure;** Ashley Gucinski^{1,2}; Julia Chamot-Rooke²; Arpad Somogyi¹; Vicki H. Wysocki¹; ¹University of Arizona, Tucson, AZ; ²DCMR - Ecole Polytechnique, Palaiseau, France
- WP 504 **Investigation of the Nonvolatile Thermal Products of Bradykinin Using Liquid Chromatography Tandem Mass Spectrometry;** Mohammed Meetani¹; Osama Zahid¹; J. Michael Conlon²; ¹United Arab Emirates University, Al-Ain, United Arab Emirates; ²Biochemistry Dept., FMHS, UAE University, Al-Ain, UAE
- PEPTIDES: QUANTITATIVE ANALYSIS – LABEL FREE I; 505 - 531**
- WP 505 **Obviating the Need for Transition Optimization in SRM Assays to Detect and Quantify any Protein of the Human Proteome;** Caroline S. Chu¹; Jeffrey Stevens¹; Ulrike Kusebauch¹; Eric Deutsch¹; David S Campbell¹; Christine Carapito^{2,4}; Mi-Youn Brusniak¹; Oliver Rinner³; Zhi Sun¹; Terry Farrah¹; Sun-Tat Kwok¹; Douglas A. Spicer¹; Paola Picotti⁴; Martin Beck⁵; Johan Malmstroem³; Reto Ossola³; Christine Miller⁶; Patrick D. Perkins⁶; Norton Kitagawa⁶; Keith Waddell⁶; Ken Miller⁶; Ruedi Aebersold⁴; Leroy Hood¹; Robert L. Moritz¹; ¹Institute for Systems Biology, Seattle, WA; ²IPHC-DSA, LSMBO, ULP-CNRS (UMR7178), Strasbourg, France; ³Biognosys AG, Zurich, Switzerland; ⁴ETH Zurich, Zurich, Switzerland; ⁵EMBL, Heidelberg, Germany; ⁶Agilent Technologies, Santa Clara, CA
- WP 506 **Automation of a Multiplexed SISCAPA Magnetic Bead Workflow for Protein Biomarker Quantitation by Mass Spectrometry;** Leigh Anderson¹; Matt Pope²; Morteza Razavi²; Terry Pearson²; Peter Werner³; Keith Waddell³; Christine Miller³; ¹Anderson Forschung Group, Washington, DC; ²University of Victoria, Biochemistry Department, Victoria, BC, Canada; ³Agilent Technologies, Santa Clara, CA
- WP 507 **Employing Mass Spectrometry for Large-scale, Targeted, and Quantitative Protein Measurements in Tumor Tissue and Cancer Cell Lines;** Jacob Kennedy¹; Ping Yan¹; Susan E. Abbatiello²; Chenwei Lin¹; Jeffrey Whiteaker¹; Travis Lorentzen¹; Eric Kuhn²; Karl R. Clauser²; Hasmik Keshishian²; Keith Rivera²; Naomi Choodnovskiy³; Youngsoo Kim⁴; Ho-Pil Min⁴; Pei Wang¹; Leigh Anderson⁵; Steven J Skates⁶; Steven A. Carr²; Amanda Paulovich¹; ¹Fred Hutchinson Cancer Research Center, Seattle, WA; ²Broad Institute, Cambridge, MA; ³Tufts University, Medford, MA; ⁴College of Medicine, Seoul Nat'l Univ, Seoul, South Korea; ⁵Plasma Proteome Institute, Washington, DC; ⁶Massachusetts General Hospital, Boston, MA
- WP 508 **Targeted Protein Quantification using High-Resolution MS -> MS/MS Transitions in a VELOS-Orbitrap;** Johannes Hewel¹; Jian Liu¹; Daniele Merico¹; Ruth Isserlin¹; Carl White¹; Anthony Gramolini²; Gary Bader¹; Andrew Emili¹; ¹Donnelly Centre, University of Toronto, Toronto, Canada; ²University of Toronto, Toronto, ON
- WP 509 **Quantification of Urinary Apolipoprotein A-I and Apolipoprotein A-2 by LC-MRM MS and Two Immuno-based Quantitative Assays;** Yi-Ting Chen¹; Hsiao-Wei Chen¹; Derek S. Smith²; Chih-Ching Wu¹; Chien-Lun Chen³; Ting Chung¹; Yu-Sun Chang¹; Christoph H. Borchers²; Jau-Song Yu¹; ¹Chang Gung University, Taoyuan, Taiwan; ²Victoria University, Victoria, British Columbia, Canada; ³Chang Gung Memorial Hospital, Taoyuan, Taiwan
- WP 510 **Absolute Quantification of Urinary Endogenous Peptides Using Selective Reaction Monitoring;** Xiaolin Li; Daniela Schlatter; Mark Chance; Case Western Reserve University, Cleveland, OH
- WP 511 **Developing Quantification of Urine UMOD by a Multiplexed Liquid Chromatography-Targeted Mass Spectrometry;** Qin Fu¹; Weihu Ji¹; Jie Zhu¹; Pingbo Zhang¹; Josef Coresh²; Jennifer Van Eyk¹; ¹Johns Hopkins University, Baltimore, MD; ²Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
- WP 512 **Increasing the Throughput of Biomarker Verification using Peptide Immunoaffinity Enrichment and Quantitative Mass Spectrometry;** Jeffrey Whiteaker; Lei Zhao; Ping Yan; Chenwei Lin; Amanda Paulovich; Fred Hutchinson Cancer Research Center, Seattle, WA
- WP 513 **Investigation of Recovery and Stability of Peptides in LC/SRM/MS Analysis;** Shucha Zhang; Jeffrey Whiteaker; Ping Yan; Regine Schoenherr; Amanda Paulovich; Fred Hutchinson Cancer Research Center, Seattle, WA
- WP 514 **A Global Approach for the Targeted LC-MS/MS Quantitation of Highly-Modified Proteins;** Peter A. DiMaggio; Nicolas L. Young; Benjamin Garcia; Princeton University, Princeton, NJ
- WP 515 **Estimation of Absolute Protein Quantities by Selected Reaction Monitoring of Unlabeled**

- Samples; Christina Ludwig¹; Manfred Claassen^{1,2}; Ruedi Aebersold^{1,3}; ¹Institute of Molecular Systems Biology, ETH Zürich, Zürich, Switzerland; ²Department of Computer Science, ETH Zürich, Zürich, Switzerland; ³Faculty of Science, University of Zürich, Zürich, Switzerland**
- WP 516 **Novel Proteomics Approach for Absolute Quantification using Polypeptides Containing a Reporter as Internal Standards; Yeoun Jin Kim; Elodie Duriez; Sebastien Gallien; Bruno Domon; Luxembourg Clinical Proteomics Center, Strassen, Luxembourg**
- WP 517 **AQUA Strategy Applied to a Thermal Degradation Marker of Transfusion Plasma: Plasma Retinol Binding Protein 4; Latifa Richa¹; Alexia Ortiz¹; Cathy Lane²; Carole Minisini²; Christine Defer³; Dominique Dernis³; Jean-Jacques Huart³; Caroline Tokarski¹; Christian Rolando¹; ¹Univ. de Lille 1, Sciences et Technologies, Villeneuve D'ascq, France; ²ABSCIEX, Warrington, England; ³Établissement Français du Sang Nord de France, Lille, France**
- WP 518 **The Generation and Application of Targeted Mass Spectrometry Assays to ~750 Human Transcription Factors and Regulatory Proteins; Andrew B. Stergachis; Kristen Lee; John A. Stamatoyannopoulos; Michael J. Maccoss; University of Washington, Seattle, WA**
- WP 519 **Probing Mass Spectrometric Strategies for High Sensitivity Quantitation of Clinically Relevant Peptides; Sahana Mollah¹; Jeff Chisholm²; Nevena Mollova²; Kwan Leung²; Claire Bramwell-German²; ¹AB SCIEX, Foster City, CA; ²Gilead, Foster City, CA**
- WP 520 **Utilizing Oxidative Stress Modifications of Human Serum Albumin as Markers for Pre-myocardial Infarction Cardiac Ischemia; Christine A. Jelinek¹; Yan Jia¹; Rebekah L. Gundry²; Jennifer VanEyck¹; Robert J. Cotter¹; ¹Johns Hopkins School of Medicine, Baltimore, MD; ²Medical College of Wisconsin, Milwaukee, WI**
- WP 521 **Quantification of Posttranslational Modifications in Recombinant Protein Using Stable Isotope Labeled Internal Standard and Mass Spectrometry; Quanzhou Luo; Xinzhaoh Jiang; Xin Zhang; Shun Luo; Matt Jerums; Jeff Lewis; Nick Keener; Gang Huang; Izydor Apostol; Jette Wypych; Amgen Inc, Thousand Oaks, CA**
- WP 522 **Proteome Profiling and Quantification of Mouse Lipid Droplets by using ¹³C-labelled Quantitative Peptide Concatamers (qCAT); Chen Ding; Benny Hung-Junn Chang; Anna Malovannaya; Lan Li; Yi Shi; Yi Wang; Lawrence C B Chan; Jun Qin; Baylor College of Medicine, Houston, TX**
- WP 523 **A Comparison of the Effects of Different Sample Matrices on Peptide Quantification by MRM; Thomas Y.K. Lau; Susan E. Abbatiello; Hasmik Keshishian; Keith D. Rivera; Steven A. Carr; Broad Institute, Cambridge, MA**
- WP 524 **Evaluation of Protein-level Separation as Sample Preparation for Absolute Protein Quantification by LC-MS/MS; Carmen L. Fernandez-Metzler¹; Jeremy L. Norris²; Chuck Witkowski²; Richard King¹; ¹PharmaCadence Analytical Services, LLC, Hatfield, PA; ²Protein Discovery, Inc., Knoxville, TN**
- WP 525 **Assessment of Different Protein Digestion Protocols for Quantitative Mass Spectrometry; Timo Glatter¹; Christina Ludwig²; Albert JR Heck³; Alexander Schmidt¹; ¹Biozentrum, University of Basel, Basel, Switzerland; ²Institute of Molecular Systems Biology, Zürich, Switzerland; ³Utrecht Institute for Pharmaceutical Sciences, Utrecht, Netherlands**
- WP 526 **Application of Fast MS3 Scanning for Absolute Protein Quantification; Richard King¹; J. Larry Campbell²; J.C. Yves Leblanc²; Bruce Collings²; Carmen L. Fernandez-Metzler¹; ¹PharmaCadence Analytical Services, LLC, Hatfield, PA; ²AB SCIEX, Concord, ON**
- WP 527 **Comparison of the Novel High Resolution MRM^{HR} Assay to the sMRM Assay for Quantifying the Dynamic Signalling Network of ShcA; Cunjie Zhang; Yong Zheng; Lorne Taylor; Karen Colwill; Tony Pawson; Mount Sinai Hospital, Toronto, Canada**
- WP 528 **Utilization of IPG-IEF-LC-MS/MS to Characterize Proteomic Differences Following Silibinin Treatment of Normal and Malignant Prostate Cells; Kristin West; Maureen Bunker; Nikhil Garge; Xinxin Zhang; Research Triangle Institute, Research Triangle Park, NC**
- WP 529 **Differential Protein Expression in the Life Cycle of the Rice Blast Fungus *Magnaporthe oryzae*; Emine Gokce; William L. Franck; Yeon Yee Oh; Ralph A. Dean; David C. Muddiman; NCSU, Raleigh, NC**
- WP 530 **Quantification of Collagen in Tissues Using Stable Isotope Labeling and LC-MS; Po-Chih Chang; Sin-Yi Chang; Yen-Peng Ho; National Dong Hwa University, Hualien, Taiwan**
- WP 531 **Quantification of eicosanoid Pathway Proteins in Human Cerebrospinal Fluid using a Dual Pressure Linear Ion Trap Mass Spectrometer; Roger G. Biringer¹; Julie Horner¹; Alfred Fonteh²; Stephen Kauffman²; Andreas Huhmer¹; August Specht¹; Michael Harrington²; ¹Thermo Fisher Scientific, San Jose, CA; ²Huntington Medical Research Institutes, Pasadena, CA**
- INTACT PROTEIN COMPLEXES; 532 - 553**
- WP 532 **Fourier Transform Ion Cyclotron Resonance Mass Spectrometry of Intact Heterogeneous Non-Covalent Protein Complexes; Weidong Cui; Hao Zhang; Michael L. Gross; Washington University, St. Louis, MO**
- WP 533 **A Simple Electrostatic Model for the Fragmentation of Protein Complexes in the Gas Phase; Stephen Sciuto; JiangJiang Liu; Lars Konermann; The University of Western Ontario, London, Canada**
- WP 534 **MS-based Approaches to define Protein Interactions in Dynamic Systems: Application to Bacterial Circadian Clocks; Rebecca Rose; Utrecht University, Utrecht, Netherlands**
- WP 535 **Characterization of Histone Multimers by ESI-MS; Shingo Shimoyama¹; Yuki Asano¹; Kyohei Takahashi¹; Hiroaki Tachiwana²; Aritaka Nagadoi¹; Hitoshi Kurumizaka²; Yoshifumi Nishimura¹; Satoko Akashi¹; ¹Yokohama City University, Yokohama, Kanagawa, Japan; ²Waseda University, Tokyo, Japan**
- WP 536 **Decustering of Protein Complexes by Trapping in the RF-ion Guide of a Hybrid Qq-**

- WP 537 **ToF Instrument;** Douglas A. Simmons; Igor V. Chernushevich; *AB SCIEX, Concord, Canada*
- WP 538 **Non-Covalent MS Analysis of Protein Cage Nanoparticles;** Shelah Qazi; Lars Liepold; Masaki Uchida; Sebyung Kang; Trevor Douglas; *Montana State University, Bozeman, MT*
- WP 539 **ESI-MS Investigation of the Binding of Human Hemoglobin to the N-terminal Domain of Erythrocyte Band 3;** Wendell P. Griffith; Jingshu Guo; *University of Toledo, Toledo, OH*
- WP 540 **Direct Ionization of Large Proteins and Protein Complexes by Liquid Sample Desorption Electrospray Ionization-Mass Spectrometry (DESI-MS);** Carly N. Ferguson¹; Sabrina A. Benchaar¹; Joseph A. Loo¹; Hao Chen²; ¹*University of California, Los Angeles, CA*; ²*Ohio University, Athens, OH*
- WP 541 **A Multiplexed Approach for the Determination of Intact Protein Mass, Dimension and Oligomerization using GEMMA, LTQ-Orbitrap MS, MALLS and QELS;** Eftymios Kapellios¹; Spyridoula Karamanou²; Marios-Frantzeskos Sardis^{2,3}; Malvina Papanastasiou²; Michalis Aivaliotis²; Anastassios Economou^{2,3}; Spiros A. Pergantis¹; ¹*Department of Chemistry, University of Crete, Heraklion, Greece*; ²*IMBB-FORTH, Heraklion, Greece*; ³*Department of Biology, University of Crete, Heraklion, Greece*
- WP 542 **Charge State Manipulation of Proteins using Continuous Flow – Extractive Desorption Electrospray Ionization–Mass Spectrometry;** Kevin Schug¹; Samuel Yang¹; Li Li¹; Aruna Wijeratne²; Veronika Vidova³; Vladimir Havlicek³; ¹*University of Texas Arlington, Arlington, TX*; ²*The Department of Cancer and Cell Biology,, Cincinnati, OH*; ³*Institute of Microbiology, Prague, Czech Republic*
- WP 543 **Electron Transfer Dissociation Reveals that Some Intra- and Intermolecular Protein Contacts are Maintained in the Gas Phase;** Shaynah Browne; Richard Vachet; *University of Massachusetts, Amherst, MA*
- WP 544 **Interpreting the Charge State Assignment in Electrospray Mass Spectra of Bioparticles;** Yao-Hsin Tseng¹; Charlotte Uetrecht²; Albert J. R. Heck²; Wen-Ping Peng¹; ¹*National Dong Hwa University, Shoufeng, Hualien, Taiwan*; ²*Utrecht University, Utrecht, Netherlands*
- WP 545 **Effective Strategies for Investigating Endogenous Protein Complexes of Low Abundance by Native MS;** Zachary Quinkert; Brian Chait; *The Rockefeller University, New York, NY*
- WP 546 **Affinity Selection-MS Enables the Rapid Optimization of Stapled Peptide Binding Affinity and Drug Properties;** Xiangguo (Eric) Shi; Carl Elkin; Noriyuki Kawahata; Allen Annis; *Aileron Therapeutics, Inc., Cambridge, MA*
- WP 547 **Non-covalent Ubiquitin-Ubiquitin Binding Domain interactions Studied by Electrospray Ionisation-Travelling Wave Ion Mobility Spectrometry-Mass Spectrometry;** Kleitos Sokratous¹; Lucy Roach¹; Robert Layfield²; Neil J. Oldham¹; ¹*School of Chemistry, University of Nottingham, Nottingham, UK*; ²*School of Biomedical Sc., University of Nottingham, Nottingham, UK*
- WP 548 **Understanding Antithrombin (AT) and Factor Xa Interaction in the Presence of Heparin Oligomers using ESI-MS;** Burcu Baykal; Rinat Abzalimov; Paul Dubin; Igor A. Kaltashov; *University of Massachusetts, Amherst, MA*
- WP 549 **Assessment of Desulfation Patterns on Heparin Octasaccharides and its Impact on Heparin:MCP-1 Conformations via Ion Mobility Mass Spectrometry;** Youjin Seo; Julie A. Leary; *UC Davis, Davis, CA*
- WP 550 **Affinity Capillary Electrophoresis On-line Coupled with Electrospray Ionization Mass Spectrometry to Probe the Oligomerization State of Chemokines upon GAGs Binding;** Mehdi Prull-Janssen¹; Florence Gonnet¹; Cédric Przybylski¹; David Bonnaffé²; Yael Hersant²; Régis Daniel¹; ¹*Université d'Evry Val d'Essonne, Evry, FRANCE*; ²*Université Paris Sud 11, Orsay, France*
- WP 551 **Quantifying Interactions between Human Milk Oligosaccharides and Clostridium difficile Toxins;** Amr El-Hawiet¹; Elena Kitova¹; Pavel Kitov¹; Luiz Eugenio²; Kenneth Ng²; George Mulvey²; Tanis Dingle²; Adam Szpacenko¹; Glen Armstrong²; John Klassen¹; ¹*University of Alberta, Edmonton, Canada*; ²*University of Calgary, Calgary, Canada*
- WP 552 **Screening Carbohydrate Libraries Against Target Proteins using Electrospray Ionization Mass Spectrometry;** Glen Shoemaker; Amr El-Hawiet; Elena Kitova; John Klassen; *University of Alberta, Edmonton, Canada*
- WP 553 **Stoichiometry of RANKL and anti-RANKL Antibody (denosumab) Complexes by Native ESI TOF Mass Spectrometry;** Pavel V. Bondarenko¹; Kelly K. Arthur²; John P. Gabrielson²; John K. Sullivan³; ¹*Amgen, Inc., Process and Product Development, Thousand Oaks, CA*; ²*Amgen, Inc., Analytical Sciences, Longmont, CO*; ³*Amgen, Inc., Inflammation Research, Thousand Oaks, CA*
- WP 554 **Gas-phase Holo-myoglobin Ions Preserve Solution-phase Heme Location;** Atim Enyenihi; Honqiang Yang; A. Jimmy Ytterberg; Roman Zubarev; *Karolinska Institutet, Stockholm, Sweden*

H/D EXCHANGE: HARDWARE, SOFTWARE AND METHODOLOGY; 554 - 566

- WP 554 **Effect of Chaotropes on Disulfide Bond Reduction at Low pH and Temperature;** Ansgar Brock; Manoj Pal; *GNF/Novartis, San Diego, CA*
- WP 555 **Automated Hydrogen/Deuterium Exchange Electron Transfer Dissociation High Resolution Mass Spectrometry Measured at Single-Residue Resolution;** Rachelle R Landgraf; Michael J Chalmers; Patrick R Griffin; *The Scripps Research Institute, Jupiter, FL*
- WP 556 **Data Analysis Providing Single Amimo Acid Resolution for Studying Proteins by HDX-MS;** Xin Zhu; Julie Cichelli; Susanne Moyer; Joe Hedrick; *Agilent Technologies, Wilmington, DE*
- WP 557 **Pressurized Online Digestion using Pepsin Immobilized on Hybrid Organic/Inorganic BEH Particles;** Joomi Ahn^{1,2}; Moon Chul Jung²; Kevin Wyndham²; Ying-Qing Yu²; John R. Engen¹; ¹*Northeastern University, Boston, MA*; ²*Waters Corporation, Milford, MA*

- WP 558 **LC Column Effects on Deuterium Back Exchange When Performing HDX Measurements;** Julie Cichelli; Xin Zhu; Susanne Moyer; Joe Hedrick; *Agilent Technologies, Wilmington, DE*
- WP 559 **Methodological Advancements in Studying Proteins that Interact with Lipid Membranes;** Xiaomeng Shi¹; Kasper Rand²; Mikyung Kim³; Ellis Reinherz³; John Engen¹; ¹Northeastern University, Boston, MA; ²Swiss Institute of Bioinformatics, Lausanne, Switzerland; ³Dana Farber Cancer Institute, Boston, MA
- WP 560 **The Use of SFC/ESI/MS and SFC/APPI/MS for Structural Elucidation and Determination of Exchangeable Hydrogens Using Deuterated Modifiers;** Mark A. Olsen¹; Kristin Krupa²; Catherine DeBrosse³; Emily Kordwitz¹; ¹Cephalon, Inc., Malvern, PA; ²University of Pittsburgh, Pittsburgh, PA; ³Temple University, Philadelphia, PA
- WP 561 **An Improved Measurement of the Isotopic Ratio by High Resolution Mass Spectrometry;** Sergei Ilchenko¹; Stephen Previs¹; Rachdaoui Nadia¹; Mark Chance¹; Takhar Kasumov²; ¹Case Western Reserve University, Cleveland, OH; ²Cleveland Clinic Foundation, Cleveland, OH
- WP 562 **Pepsin-cotaining Nylon Membranes for Controlled Protein Digestion Prior to Analysis of Hydrogen/Deuterium Exchange by Mass Spectrometry;** Yujing Tan; Xiao Zhou; Merlin Bruening; *Michigan State University, East Lansing, MI*
- WP 563 **Probing Conformation and Dynamics of Large Disulfide-rich Proteins using a Middle-down HDX/MS Approach: Elimination of Chemical Reduction and LC Separation;** Rinat R. Abzalimov; Cedric E. Bobst; Igor A. Kaltashov; *University of Massachusetts, Amherst, MA*
- WP 564 **Structurally Resolved Conformational Dynamics on the Millisecond Timescale Using a Microfluidic Device Incorporating TRESI, HDX and Rapid Proteolytic Digestion;** Tamanna Rob; Derek Wilson; *York University, Toronto, Canada*
- WP 565 **Ion Mobility Enhanced Hydrogen-Deuterium Exchange Mass Spectrometry;** Michael Eggertson¹; Keith Fadgen¹; Martha Stapels¹; John R. Engen²; Thomas Wales²; ¹Waters Corporation, Milford, MA; ²Northeastern University, Boston, MA
- WP 566 **High-throughput Flexible Automated Hydrogen/Deuterium Exchange Mass Spectrometry (DXMS) Sample Preparation/Processing Apparatus that has Produced Data for More Than 52 Publications;** Sheng Li¹; Tong Li¹; Kossi Lekpor²; Yunan Miao²; Terry D Lee²; Virgil L Woods Jr.¹; ¹University of California, San Diego, La Jolla, CA; ²Beckman Research Institute of the City of Hope, Duarte, CA
- WP 569 **Software for Identification of Disulfide-Linked Peptides via CID and ETD of Mass Spectra and Protein Sequence Database;** Matthew Leitch²; Rovshan Sadygov²; Chen Li¹; Shiao-Lin Wu¹; Barry L. Karger¹; ¹Northeastern University, Boston, MA; ²University of Texas Medical Branch, Galveston, TX
- WP 570 **Protein Modification and Crosslinking of Allergens in Thermal Processing of Peanuts;** Christine M. Hebling; Melinda A. McFarland; Mark M. Ross; John H. Callahan; *FDA-CFSAN, College Park, MD*
- WP 571 **3D Protein Structure Through Chemical Cross-linking, H/D-exchange, Mass-spectrometry and Software-assisted Modelling;** Morten Rasmussen¹; Jan Refsgaard¹; Li Peng¹; Sanne Boelt²; Sabine Amon¹; Thomas Jørgensen¹; Peter Hojrup¹; ¹University of Southern Denmark, Odense M, Denmark; ²Statens Serum Institut, Copenhagen, Denmark
- WP 572 **Effect of Chemical Cross-Linking on Protein Structure Investigated by Travelling-Wave Ion Mobility Mass Spectrometry and Molecular Dynamics Simulations;** Fabio C Gozzo; Alexandre F. Gomes; Paulo C. T. Souza; Munir S. Skaf; *IQ - University of Campinas, Campinas, Brazil*
- WP 573 **Chemical Cross-linking and Mass Spectrometry applied to Structural Modeling of the Focal Adhesion Kinase and α B-Crystalline Complex;** Alana Dos Reis Figueiredo¹; Michelle Bueno de Moura Pereira²; Sean McIlwain³; William Stafford Noble³; Kleber Gomes Franchini²; Fabio Cesar Gozzo¹; ¹State University of Campinas, Campinas, Brazil; ²Brazilian National Laboratory of Synchrotron Light, Campinas, Brazil; ³Dep. of Genome Sciences, University of Washington, Seattle, WA
- WP 574 **Chemical Cross-linking Coupled to Mass Spectrometry Applied to the Characterization of the Interaction Region in FERM-Myosin Complex;** Mariana Fioramonte¹; Alina Mara Santos²; Kleber Gomes Franchini²; Fabio Cesar Gozzo¹; ¹State University of Campinas, Campinas, Brazil; ²Brazilian National Laboratory of Synchrotron Light, Campinas, Brazil
- WP 575 **The Designed Peptide that has the Difficult Sequence Showed Different Mass Spectra among Different Instruments;** Akiyoshi Hirata¹; Takeshi Kasama²; Ruediger Pipkorn³; Kiyoshi Nokihara¹; ¹HiPep Laboratories, Kyoto, Japan; ²Tokyo Medical and Dental University, Tokyo, Japan; ³German Cancer Research Center (DKFZ), Heidelberg, Germany
- WP 576 **Identification of Disulfide-bridges in Human Serum Proteins Using Mass Spectrometry and Concatenated Peptide Databases;** Stephanie Maniatis; Karin Green; John D. Leszyk; Scott A. Shaffer; *University of Massachusetts Medical School, Worcester, MA*
- WP 577 **Reactivity, Mechanism and Stability of the Formaldehyde Cross-linking Reaction of Proteins Revealed by Mass Spectrometry-based Studies;** Xuan Ding; Savita Srinivasa;

BIOMOLECULAR STRUCTURE ANALYSIS: CHEMICAL CROSSLINKING; 567 - 588

- WP 567 **A Simple Measure to Monitor the Progress of Chemical Cross-linking of Protein-protein Noncovalent Interactions;** Stefanie Maedler; Ruizhu Huang; Elisabetta Boeri Erba; Renato Zenobi; *ETH Zurich, Zurich, Switzerland*
- WP 568 **Mass Spectrometric Characterization of Gelsolin and Its Interacting Domains;**

- Jürgen Kast; *The University of British Columbia, Vancouver, Canada*
- WP 578 **Structure and Organization of Small Heat Shock Protein-Substrate Complexes Investigated by Cross-linking and Mass Spectrometry;** Heather O'Neill¹; Wenzhou Li¹; Vicki Wysocki¹; Elizabeth Vierling²; ¹University of Arizona, Tucson, AZ; ²University of Massachusetts, Amherst, MA
- WP 579 **An Enhanced Protein Crosslink Identification Strategy using CID-Cleavable Chemical Crosslinkers and LC/MSⁿ;** Fan Liu¹; Cong Wu²; Jonathan Sweedler²; Michael Goshe¹; ¹NC State University, Raleigh, NC; ²University of Illinois, Urbana, IL
- WP 580 **Xlink-Identifier: An Automated Data Analysis Platform for Confident Identifications of Chemically Cross-linked Peptides using Tandem Mass Spectrometry;** Xiuxia Du; UNC-Charlotte, Kannapolis, NC
- WP 581 **Structural Studies of sBBI/Trypsin Non-covalent Complex using Cross-linking Reagents;** Ekaterina Darii¹; Guanlini Saravanamuthu¹; Jean-Claude Tabet³; Ivo G. Gut^{1,2}; ¹CEA/IG/CNG, Evry, France; ²CNAG, Barcelona, Spain; ³University Paris 6 (UPMC), Paris, France
- WP 582 **Intra- and Inter-Molecular Cross-Linking of Peptide Ions in the Gas-Phase Using N-hydroxysulfosuccinimide Based Reagents;** Marija Mentinova; Scott A. Mcluckey; *Purdue University, West Lafayette, IN*
- WP 583 **Estimation of False Discovery Rates in Cross-linking Datasets;** Thomas Walzthoeni¹; Alexander Leitner¹; Franz Herzog¹; Friedrich Förster²; Manfred Claassen¹; Martin Beck³; Ruedi Aebersold¹; ¹Institute of Molecular Systems Biology, Zurich, Switzerland; ²Max Planck Institute of Biochemistry, Munich, Germany; ³European Molecular Biology Laboratory, Heidelberg, Germany
- WP 584 **Structural Analysis of a Prokaryotic Ribosome using a Novel Amidinating Cross-Linker;** Matthew Lauber; James P. Reilly; *Indiana University, Bloomington, IN*
- WP 585 **Preferential Cleavage of Diethyl Suberthioimide (DEST) Cross-linked Peptides and Its Application in Identification of Cross-linking Products by Tandem MS;** Yi He; Matthew Lauber; James P. Reilly; *Indiana University, Bloomington, IN*
- WP 586 **Identification of Specific Glutamine Acceptor Sites and Lysine Donor Sites Involved in Fibrin Cross-Linking;** Weixun Wang; *Merck Research Labs, Rahway, NJ*
- WP 587 **Sampling the Topography of Multiprotein Complexes by Reductive Alkylation Crosslinking in Conjunction with High Resolution ETD-MS/MS Analysis;** Michael Trnka; Peter R. Baker; A.L. Burlingame; *University of California San Francisco, San Francisco, CA*
- WP 588 **Mass Spectrometric Strategies for Improved Identification of Cross-linked Peptides;** Pragya Singh; Richard A. Pfuetzner; Samuel I. Miller; David R. Goodlett; *University of Washington, Seattle, WA*

PROTEOMICS: METHOD DEVELOPMENT IN CLINICAL APPLICATIONS; 589 - 604

- WP 589 **An MS Based Method for the Determination of Hemoglobin Concentration in Human Blood Samples;** Chris Hughes¹; Jonathan Williams¹; Brian Green¹; Johannes PC Vissers¹; David Roper²; ¹Waters, Manchester, UK; ²Diagnostic Haematology, Hammersmith Hospital, London, UK
- WP 590 **Development of an LC-MS Method for the Quantitation of Pancreatic Cancer Biomarkers in Human Serum;** Angela Y Wehr¹; Kenneth Yu²; Ian A. Blair¹; ¹University of Pennsylvania, Philadelphia, PA; ²Memorial Sloan-Kettering Cancer Center, New York, NY
- WP 591 **The Development of Rapid Diagnostic Approaches for the Characterisation of Hemoglobin Disorders;** Krisztina Radi; Charlotte A. Scarff; Susan E. Slade; Nisha A. Patel; James H. Scrivens; *University of Warwick - Life Sciences, Coventry, UK*
- WP 592 **Comparison of Label-free Strategies for Quantifying Proteins from Diseased Human Brain Tissue;** James A Atwood III¹; Laura Donovan²; Marla Gearing²; Allan Levey²; James Lah²; Nicholas Seyfried²; Archer Smith IV¹; D Brent Weatherly^{1,3}; ¹NuSep, Inc, Bogart, GA; ²Emory University, Atlanta, GA; ³University of Georgia, Athens, GA
- WP 593 **Relative Quantification of Glycation Sites in Human Serum Albumin by ¹⁸O Labeling and MALDI-TOF MS;** Omar Barnaby¹; Ronald L. Cerny²; David Hage²; ¹Saint Louis University, St. Louis, MO; ²University of Nebraska - Lincoln, Lincoln, NE
- WP 594 **Novel, Efficient and Sensitive Method for Protein Recovery from Laser Capture Microdissected Cells Isolated from Formalin Fixed Paraffin Embedded Biopsies;** John Shapiro; Mary Severin; Gerard Lozanski; Michael A. Freitas; *Ohio State University, Columbus, OH*
- WP 595 **A Novel Approach for Characterization Histone Isoform Distribution Across Cellular Compartments;** Sean W. Harshman; Amy J. Johnson; John C. Byrd; Michael A. Freitas; *Ohio State University, Columbus, OH*
- WP 596 **A Mass Spectrometry-Based Quantification Method for the Detection of Bound and Free Therapeutic Antibodies in Patient Serum Samples;** Cornelia Koy¹; Metin Konus¹; Peter Lorenz²; Susanne Drynda³; Joern Kekow³; Hans-Juergen Thiesen²; Michael O. Glocker¹; ¹Proteome Center Rostock, Rostock, Germany; ²Institute of Immunology, University of Rostock, Rostock, Germany; ³Clinic of Rheumatology, University of Magdeburg, Magdeburg, Germany
- WP 597 **Development of a Mass Spectrometry-Based Assay for Measurement of Angiotensin I and Plasma Renin Activity to Diagnose Secondary Hypertension;** Jennifer D. Reid¹; D. Randal Mason¹; Carol E. Parker¹; Daniel T. Holmes²; Christoph H. Borchers¹; ¹UVic Genome BC Proteomics Centre, Victoria, Canada; ²St. Paul's Hospital, Vancouver, Canada
- WP 598 **Biosynthetic Concatenated Labeled Peptides are Useful Alternatives to Whole Labeled Proteins: Human Serum Albumin as a Case Study;** Jacquelyn Cole¹; Dhaval Nanavati²; Cai Chen¹; Brian Martin¹; Anthony J. Makusky¹;

- Gyorgy Csako³; Sanford P. Markey¹; ¹NIMH/NIH, Bethesda, MD; ²Northwestern University, Evanston, IL; ³DLM/Clinical Center/NIH, Bethesda, MD
- WP 599 **ee quantiLabel-free Method of Proteomic Profiling to Detect Novel Proteins for Systemic Lupus Erythematosus (SLE) Kidney Damage during Disease Flaring**; Lining Qi¹; Hermine Brunner²; Michael Bennett²; Prasad Devarajan²; Shannen Nelson²; Prasad Devarajan²; John Schlager¹; Pavel Shiyanov¹; ¹HJF - 711HPW/RHPB, US Air Force Research Lab, Wright-Patterson Air Force Base, OH; ²Cincinnati Children's Hospital Medical Center, Cincinnati, OH
- WP 600 **Developing System Suitability Criteria and Evaluation Methods for Proteomics Experiments**; Daniela Tomazela; Jesse D. Canterbury; Gennifer Merrihew; Brendan Maclean; Michael J. Maccoss; University of Washington, Seattle, WA
- WP 601 **Predicting Treatment-Response for HCV Therapy: Successful Translation from Discovery LC/MSE to Verification LC/MS/MS**; Laura G. Dubois¹; J. Will Thompson¹; Joseph E. Lucas¹; Keyur Patel²; Jeanette McCarthy¹; M. Arthur Moseley¹; ¹Duke University School of Medicine, Durham, NC; ²Duke Clinical Research Institute, Durham, NC
- WP 602 **Human Growth Hormone Quantitation In Serum By Isoform Ratio Analysis Using Nanoparticle Capture/Multiple Reaction Monitoring-Mass Spectrometry**; Paul Russo¹; Taha Rezaei²; Amol Prakash²; Mary F Lopez²; Davide Tamburro¹; Claudia Fredolini¹; Lance Liotta¹; Emanuel Petricoin¹; ¹George Mason University, Manassas, VA; ²Thermo Scientific BRIMS, Boston, MA
- WP 603 **Analysis of Esophageal Inflammation using a Novel Proteomics-Based Approach**; Karen Jonscher¹; Agnieszka Kendrick¹; Sophie Fillon¹; Zachary Robinson¹; Joanne Masterson¹; Steven Ackerman²; Glenn Furuta^{1,3}; ¹University of Colorado Denver, Aurora, CO; ²University of Illinois at Chicago, Chicago, IL; ³The Children's Hospital, Aurora, CO
- WP 604 **Global and Pulsed SILAC in the Elucidation of the Effects of Sunitinib, a Multi-targeted Receptor Tyrosine Kinase Inhibitor**; Robert Li Graham; Michael J Sweredoski; Sonja Hess; CalTech, Pasadena, CA
- PROTEOMICS: SAMPLE PREPARATION; 605 - 630**
- WP 605 **Identification and Affinity Characterization of Lactose Binding Epitopes in Rat galectin-5 by Proteolytic excision- MS and Bioaffinity Analysis**; Frederike Eggers; Adrian Moise; Michael Przybylski; University of Konstanz, Konstanz, Germany
- WP 606 **Using CysteinyI-Peptide Capture to Increase the Depth of Coverage in Protein Expression Analysis**; Christie Hunter¹; Vojtech Tambor³; Juraj Lenco²; Sean L. Seymour¹; Lydia Nuwaysir¹; Marian Kacerovsky³; ¹AB SCIEX, Foster City, CA; ²University of Defence, Hradec Kralove, Czech Republic; ³University Hospital, Hradec Kralove, Czech Republic
- WP 607 **Exploring Nucleotide-binding Proteins at the Whole Proteome Scale using Affinity-labeled Nucleotide Probes**; Yongsheng Xiao; University of California, Riverside, Riverside, CA
- WP 608 **Improved Experimental Protocols and Data Analysis Tools for High-Throughput Protein Complex Identification in Bacteria Using a Quantitative 'Tagless' Strategy**; Haichuan Liu¹; Ming Dong²; Lee L Yang²; Maxim Shatsky^{2,3}; Megan Choi²; Nikita Khainovski⁴; Simon Allen¹; Evelin D Szakal¹; Steven C Hall¹; Susan J Fisher¹; Terry C Hazen²; Jill T Geller²; Mary E Singer²; John-Marc Chandonia^{2,3}; Jian Jin²; Mark D Biggin²; H Ewa Witkowska¹; ¹University of California at San Francisco, San Francisco, CA; ²Lawrence Berkeley National Laboratory, Berkeley, CA; ³University of California at Berkeley, Berkeley, CA; ⁴Consultant, Framingham, MA
- WP 609 **Peptide Enrichment in Protein Complex Cross-Linking Analysis of a Model Homodimeric Protein Using Mass Spectrometry**; Funing Yan¹; Fa-Yun Che¹; Edward Nieves²; Louis Weiss¹; Ruth Hogue Angeletti²; Andras Fiser¹; ¹Albert Einstein College of Medicine, Bronx, NY; ²Albert Einstein College of Med, Bronx, NY
- WP 610 **Isolation, Characterization, and Imaging Analysis of Human Mediator Complexes Using HaloTag Technology**; Danette Daniels²; Richard Jones¹; David Allen¹; Ravi Amunugama¹; Michael Ford¹; Nancy Murphy²; Marie Schwinn²; Jacqui Mendez²; Helene Benink²; Marjeta Urh²; ¹MS Bioworks, LLC, Ann Arbor, MI; ²Promega Corporation, Madison, WI
- WP 611 **Knock-in AP-MS for Sensitive Identification of Protein Complexes at Physiological Levels**; Jing Song; Zhanwen Du; Yujun Hao; Zhenghe Wang; Rob Ewing; Case Western Reserve University, Cleveland, OH
- WP 612 **Tagging Lysine with N-Acetyl Dipeptides for Quantification of Proteins Using High-Mass Isotope-Coded Signals**; Seung Koo Shin; Jongcheol Seo; Hye-Joo Yoon; POSTECH, Pohang, South Korea
- WP 613 **A Versatile, Multiplexed, Mass Spectrometry Based, in vitro Assay for Measuring Protease Activities**; Fiona E Mcallister; Ryan Kunz; Woong Kim; Steven Gygi; Harvard Medical School, Boston, MA
- WP 614 **MS Strategy for Protein-Ligand Binding Analysis Using An Isotope Labeling Technique**; Hai-Tsang Huang; Patrick D. DeArmond; Graham M. West; Michael C. Fitzgerald; Duke University, Durham, NC
- WP 615 **Profiling the Serine Hydrolase Superfamily using Activity-based Probes**; Ryan Bomgarden¹; Rosa Viner²; Chris Etienne¹; John C. Rogers¹; ¹Thermo Fisher Scientific, Rockford, IL; ²ThermoFisher Scientific, San Jose, CA
- WP 616 **Identifying Specific Protease-substrate Interactions by a Comparative IP and Enzymatic Approach**; John Paul Savaryn^{1,2}; Mark White^{1,3}; Thomas Zahrt^{1,3}; Brian Halligan^{1,2}; Scott Terhune^{1,2}; ¹Medical College of Wisconsin, Milwaukee, WI; ²Biotechnology and Bioengineering Center, Milwaukee, WI; ³Center for Infectious Disease Research, Milwaukee, WI
- WP 617 **Protein Cleavage, Disulfide Bonds Reduction, Signal Enhancement and More using Electrochemistry/MS**; Jean-Pierre Chervet¹;

- Agnieszka Kraj¹; Martin Eysberg¹; Joann Purkerson²; ¹*Antec, Zoeterwoude, Netherlands*; ²*Antec USA, Palm Bay, FL*
- WP 618 **Protein Identification by Ultrafast Proteolysis Using Trypsin-Immobilized Membranes and Ion-Ion Reactions on A Quadrupole Time-of-Flight Mass Spectrometer**; Chamnongsak Chanthamontri¹; Wei-Han Wang²; Merlin L. Bruening²; Scott A. McLuckey¹; ¹*Purdue University, West Lafayette, IN*; ²*Michigan State University, East Lansing, MI*
- WP 619 **Microwave-Assisted Phosphoproteomics**; Peter Liu¹; Victoria Pham²; Wendy Sandoval²; ¹*Genentech Inc, South San Francisco, CA*; ²*Genentech, South San Francisco, CA*
- WP 620 **A Novel Recombinant Lys-C Protease for Proteomic Sample Preparation**; Sergei S. Savelyev¹; James R. Hartnett¹; Rebecca L. Godat¹; Alexander S. Hebert²; Joshua J. Coon²; Marjeta Urh¹; ¹*Promega Corporation, Madison, WI*; ²*UW-Madison, Madison, WI*
- WP 621 **The Optimization of Protein Digestion Methods using Trypsin or LysC or Both for Decision-Tree Driven MS/MS**; Junjie Hou; Laurence M. Brill; *Sanford-Burnham Medical Research Institute, San Diego, CA*
- WP 622 **A Replaceable Microreactor for On-line Protein Digestion in a Two-dimensional Capillary Electrophoresis System with Tandem Mass Spectrometry Detection**; Yihan Li; *University of Notre Dame, Notre Dame, IN*
- WP 623 **Development of Immobilized Pepsin Microreactor for Rapid Protein Identification by Hydrogen/Deuterium Exchange and NanoElectrospray Mass Spectrometry**; Ying Long; Troy Wood; *SUNY at Buffalo, Buffalo, NY*
- WP 624 **A Microfluidic Cell Culture Chip for Proteomics**; Pratap Reddy Machavaram Siva; Steven A. Soper; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*
- WP 625 **Thermal Degradation Products of Phosphopeptide**; Liang Lu; Franco Basile; *University of Wyoming, Laramie, WY*
- WP 626 **Formation of Cross-Linked Products during the Pyrolysis of Peptides**; Chenglin Liu; Franco Basile; *University of Wyoming, Laramie, WY*
- WP 627 **Selective Exploration of Protein Phosphorylation, Glycosylation and Disulfide Bridges by Mass-Pair Detection**; He-Hsuan Hsiao¹; Hsin-Yu Hsieh²; Henning Urlaub¹; ¹*Bioanalytical Mass Spectrometry Group, MPIBpc, Göttingen, Germany*; ²*Genomics Research Center, Academia Sinica, Taipei, Taiwan*
- WP 628 **Optimization of Parameters for Coverage of Low Molecular Weight Proteins**; Stephan Müller¹; Tibor Kohajda¹; Sven Findeiß²; Peter F. Stadler²; Stefan Washietl³; Manolis Kellis³; Martin von Bergen¹; Stefan Kalkhof¹; ¹*Helmholtz-Centre UFZ, Leipzig, Germany*; ²*University Leipzig, Leipzig, Germany*; ³*Massachusetts Institute of Technology, Cambridge, MA*
- WP 629 **A New High Capacity MALDI Target Format for Improved LC-MALDI Analysis of Complex Proteomics Samples**; Arndt Asperger; Martin Schuerenberg; Detlev Suckau; Marcus Macht; *Bruker Daltonik GmbH, Bremen, Germany*
- WP 630 **Comparison between Different Extraction Methods in Spirulina Maxima Using a Proteomics Approach**; Hee-Joung Lim^{2,4}; Sun Jong Kim⁴; MI Joung Kim^{1,4}; Jee Young Lee¹; Bora Kim³; Na-Young Han³; Tran Huyen Trang³; Jin Hyun Jun¹; Joung-Hoon Kim²; HooKeun Lee³; Hee-Gyoo Kang¹; ¹*Eulji University, Sungnam, South Korea*; ²*Korea University, Seoul, South Korea*; ³*Gachon University, Incheon, South Korea*; ⁴*Kairos Co. Ltd, Sungnam, South Korea*
- PROTEOMICS: PLASMA; 631 - 646**
- WP 631 **An Automated Serum Depletion Process Designed to Inject and Fractionate Samples Using a Commercially Available HPLC System**; Eric Beil; Dariusz Janecki; Steven C. Pomerantz; Jennifer F. Nemeth; *Centocor R&D, a division of J&PRD LLC, Radnor, PA*
- WP 632 **Plasma Protein Fractionation by Semi-Selective Precipitation at Different pH for Increased Proteome Coverage**; Ekaterina Mostovenko¹; Hannah C Scott¹; Andre M Deelder¹; Magnus Palmblad²; ¹*Leiden University Medical Center, Leiden, Netherlands*; ²*Leiden University, Leiden, Netherlands*
- WP 633 **Accurate Quantitative Determination of the Reproducibilities and Efficiencies of Cartridge and Column-based Depletion Methods for Plasma Proteins using Multiplexed MRM**; Alexander G Camenzind; Monica H Elliott; Juncong Yang; Angela M Jackson; Derek Smith; Christoph H Borchers; *UVic Genome BC Proteomics Centre, Victoria, BC*
- WP 634 **Use of Enrichment and Depletion Approaches to Increase Serum Proteome Coverage in Quantitative Proteomics Experiments**; Min-Sik Kim¹; Nandini A. Sahasrabudhe^{1,2}; Julie Wight³; Akhilesh Pandey^{1,2}; ¹*Johns Hopkins University, Baltimore, MD*; ²*Institute of Bioinformatics, Bangalore, India*; ³*Agilent Technologies, Columbia, MD*
- WP 635 **Investigation of Denaturants on Digestion Efficiency and Reproducibility: What are the "Best" Digestion Conditions?**; James Markell¹; Susan E. Abbatiello¹; Corbin Whitwell²; Lisa Zimmerman²; Paul Rudnick³; Stephen Stein³; Birgit Schilling⁴; Steven C. Hall⁵; Steven A. Carr¹; ¹*Broad Institute of MIT and Harvard, Cambridge, MA*; ²*Vanderbilt University, Nashville, TN*; ³*NIST, Gaithersburg, MD*; ⁴*Buck Institute for Research on Aging, Novato, CA*; ⁵*UCSF Sandler-Moore Mass Spectrometry Core Facility, San Francisco, CA*
- WP 636 **The Use of Mass Spectrometry Combined with mTRAQ™-Labelled Surrogate Standards to Compare Enrichment Strategies for Target Peptides in Plasma**; David N. Potier¹; John R. Griffiths²; Richard D. Unwin³; Ralf Hoffmann⁴; Anthony D. Whetton¹; ¹*The University of Manchester, Manchester, UK*; ²*Paterson Institute for Cancer Research, Withington, UK*; ³*Central Manchester University Hospitals NHS Founda, Manchester, UK*; ⁴*Philips Research, Eindhoven, The Netherlands*
- WP 637 **Investigation of Proteins that Accumulate during Blood Storage using a Label-free Semi-quantitative Mass Spectrometry Based Approach**; Monika Dzieciatkowska¹; Marguerite Kelher¹; Christopher Silliman^{1,3}; Anirban Banerjee²; Kirk Hansen¹; ¹*University of Colorado Denver, Denver, CO*; ²*Denver Health Medical*

- Center, Denver, CO; ³Bonfils Blood Center, Denver, CO
- WP 638 **Monitoring Plasma and Serum Integrity Using Quantitative Mass Spectrometry;** Maria Hassis; Miles Braten; Matthew Albertolle; Jennifer Adibi; Richard Niles; Susan Fisher; Katherine Williams; UCSF, San Francisco, CA
- WP 639 **Systematic Comparison of Alternative Fractionation Methods for Biomarker Discovery and Targeted Quantitative MRM Analysis using Human Plasma;** Zhiyun Cao; Hsin-Yao Tang; Tony Chang-Wong; Lynn A. Beer; Nicole Gorman; Won-A Joo; Huan Wang; David W. Speicher; The Wistar Institute, Philadelphia, PA
- WP 640 **Analysis of Modifications Involved by Pathogen Inactivation Treatments of Transfusion Plasma;** Alexia Ortiz¹; Fabrice Bray¹; Christine Defer²; Dominique Dermis²; Jean-Jacques Huart²; Caroline Tokarski¹; Christian Rolando¹; ¹Univ. de Lille 1, Sciences et Technologies, Villeneuve D'ascq, France; ²Établissement Français du Sang Nord de France, Lille, France
- WP 641 **Quantitative Plasma Proteomic Profiling to Understand Age-related Effects in Sepsis Patients;** Zhiyun Cao; Sachin Yende; John A. Kellum; Rena A. S. Robinson; University of Pittsburgh, Pittsburgh, PA
- WP 642 **Highly Multiplexed MRM Assay for the Rapid Profiling of 158 Plasma Proteins per Run using an Agilent 6490 TQMS;** Angela M Jackson¹; Juncong Yang¹; Tyra J Cross¹; Alexander G Camenzind¹; Dominik Domanski¹; Derek Smith¹; Leigh Anderson²; Christoph H Borchers¹; ¹UVic GBC Proteomics Centre, Victoria, BC; ²Plasma Proteome Institute, Washington, DC
- WP 643 **Measurement of the Intra- and Inter-individual Biological Variability of Chicken Plasma Proteins by Multiple Reaction Monitoring;** Genna L. Andrews; James Petitte; David C. Muddiman; Adam Hawkrige; North Carolina State University, Raleigh, NC
- WP 644 **Rapid Data-independent Acquisition for Protein Identification from Immunodepleted Human Sera;** Karin Green; Stephanie Maniatis; Andre Kopoyan; Scott A. Shaffer; University of Massachusetts Medical School, Worcester, MA
- WP 645 **Establishing Quality Control Metrics for Immunodepletion of High-abundance Plasma Proteins and Applying to a Large Clinical Cohort;** Meredith Turner; Erik J. Soderblom; J. Will Thompson; Laura G. Dubois; M. Arthur Moseley; Duke University School of Medicine, Durham, NC
- WP 646 **Global Proteome Dynamics through ²H-metabolic Labeling;** Ling Li; Cleveland Clinic Foundation, Cleveland, OH
- BIOMARKERS: DISCOVERY II; 647 - 660**
- WP 647 **Search for novel Chemical Warfare Agents Exposure Biomarkers using LC-MS/MS;** Koichiro Tsuge; Mieko Kanamori-Kataoka; Isaac Ohsawa; Takafumi Sato; Takeshi Ohmori; Yasuo Seto; Nat. Res. Inst. of Police Science, Kashiwa, JAPAN
- WP 648 **Hemoglobin: 5-hydroxymethylfurfural Adducts Top-down and Bottom-up Study;** Gerhard Kummerow; Maria Ospina; Hubert Vesper; Centers for Disease Control and Prevention, Atlanta, GA
- WP 649 **Brain Nitrosative Stress in Second Hand Smoke Rat Model;** Joy Guingab¹; Firas Kobaisy^{1,3}; Stanley M. Stevens, Jr.²; John Anagli¹; Kevin Wang¹; ¹Banyan Biomarkers, Inc., Alachua, FL; ²University of South Florida, Tampa, FL; ³University of Florida, Gainesville, FL
- WP 650 **Fatty Acid Ratio as a Potential Biomarker in Identification of Lard Using Gas Chromatography-Mass Spectrometry (GC-MS);** Che Nin Binti Man; National Poison Centre, Penang, Malaysia
- WP 651 **Comparison of Chicken Light and Dark Meat using LC MALDI-TOF Mass Spectrometry as a Model System for Biomarker Discovery;** Jie Du; Stephen J. Hattan; Kenneth Parker; VIC Instruments Corporation, Sudbury, MA
- WP 652 **Enhanced Tryptic Digestion in under 10 Minutes using AFA Technology;** Issa Isaac¹; William K. Russell²; David H. Russell²; ¹Covaris, Inc., Woburn, MA; ²Texas A&M University, College Station, TX
- WP 653 **MALDI-FTICR-MS Precision Profiling of Human Serum Peptides;** Simone Nicolardi; Yuri E.M. Van Der Burgt; Magnus Palmblad; Rob A.E.M. Tollenaar; André M. Deelder; Leiden University Medical Center, Leiden, Netherlands
- WP 654 **Identification of DiNP Metabolites for Exposure Marker Discovery using *in vitro/in vivo* Metabolism and Signal Mining Strategy with LC-MS Data;** Pao-Chi Liao; Jing-Fang Hsu; Li-Wen Peng; National Cheng-Kung Univ., College of Medicine, Tainan, TAIWAN
- WP 655 **Selective Enrichment and Sensitive Detection of Peptide/Protein Biomarkers in Human Serum Using Polymeric Reverse Micelles and MALDI-MS Analysis;** Nadnudda Rodthongkum; Rajasekharreddy Ramireddy; Sankaran Thayumanavan; Richard Vachet; University of Massachusetts, Amherst, MA
- WP 656 **New Isoforms of HDL apolipoprotein C-1 In Individuals with Coronary Heart Disease;** Ronald D. Macfarlane; Texas A & M University, College Station, TX
- WP 657 **Development of an Internal Standard for Studies of Human Plasma by Label Free Quantitative Analysis;** Timothy Radabaugh²; Haili Xu⁴; George Tsapraillis⁸; Zhenqiang Lu³; Junmei Liu³; Dean Billheimer^{3,7}; Donata Vercelli^{5,6}; Marilyn Halonen^{4,5}; Serrine S Lau^{1,2}; ¹Southwest Environmental Health Sciences Center, Tucson, AZ; ²Dept. of Pharm/Tox, College of Pharmacy, Tucson, AZ; ³Statistics Consulting Laboratory, Tucson, AZ; ⁴Dept. of Pharmacology, Tucson, AZ; ⁵Arizona Respiratory Center, Tucson, AZ; ⁶Arizona Center for the Biology of Complex Disease, Tucson, AZ; ⁷Dept. of Agricultural and Biosystems Engineering, Tucson, AZ; ⁸Center for Toxicology, The University of Arizona, Tucson, AZ
- WP 658 **Integrative Effects of Precursor Ion Exclusion and Multi-Dimensional Fractionation on In-Depth Identification of Plasma Biomarkers;** Wells W. Wu; Rong-Fong Shen; Josephine M. Egan; Luigi Ferrucci; Sung-Soo Park; Yu Zhou; Stuart Maudsley; Bronwen Martin; NIH (NIA), Baltimore, MD

- WP 659 **Proteomic Analysis of ePFT-Collected Pancreatic Fluid to Investigate Chronic Pancreatitis**; Joao Paulo^{1,2}; Peter Banks¹; Darwin Conwell¹; Hanno Steen^{2,3}; ¹Harvard Medical School/Brigham & Women's Hospital, Boston, MA; ²Proteomics Center at Children's Hospital Boston, Boston, MA; ³Harvard Medical School/Children's Hospital Boston, Boston, MA
- WP 660 **From SHOTGUN to SNIPER – Pipeline for Discovery and Validation of Human Wound Fluid Biomarkers**; Christoph Krisp^{1,2}; Matthew McKay²; Dirk Wolters¹; Mark Molloy^{2,3}; ¹Ruhr University Bochum, Bochum, Germany; ²Macquarie University, Sydney, Australia; ³APAF, Sydney, Australia
- BIOMARKERS: QUANTITATIVE ANALYSIS; 661 - 690**
- WP 661 **Aqueous Normal Phase LC/QqQ MS Quantification of Protein-bound Chlorotyrosine and Nitrotyrosine in the Colon Tissue of Rag2-/- Hh Mouse**; Yu Zeng¹; John S. Wishnok¹; James Fox²; Steve Tannenbaum^{1,3}; ¹Department of Biological Engineering, MIT, Cambridge, MA; ²Division of Comparative Medicine, MIT, Cambridge, MA; ³Department of Chemistry, MIT, Cambridge, MA
- WP 662 **High-Throughput Ultra-Performance Liquid Chromatography/Tandem Mass Spectrometry Quantitation of Endogenous Adrenal Steroids in Biological Samples**; Yongxin Zhu; Bristol-Myers Squibb Company, Princeton, NJ
- WP 663 **Ultra Sensitive Measurement of Epinephrine and Norepinephrine in Human Plasma using LC/MS/MS**; Guodong Zhang; Zhaosheng Lin; Yizhong Zhang; Chengjie Ji; Thomas McDonald; Justin Walton; Rick Steenwyk; Pfizer Inc., East Lyme, CT
- WP 664 **LC-MS Quantitative Analysis of Acylcarnitines in Serum from Mice Dosed with Acetaminophen**; Lisa Pence¹; Shubhra Chaudhuri^{2,3}; Laura James^{2,3}; Sandra McCullough^{2,3}; Rick Beger¹; ¹FDA-National Center for Toxicological Research, Jefferson, AR; ²University of Arkansas for Medical Sciences, Little Rock, AR; ³Arkansas Childrens Hospital, Little Rock, AR
- WP 665 **Determination of Low Levels of ²H-labeling using High-resolution Mass Spectrometry (HR-MS): Application in Studies of Lipid Flux and Beyond**; Kithsiri Herath; Jiong Yang; Wendy Zhong; Alison Kulick; Rory Rohm; Michael Lassman; Jose Castro-Perez; Ablatt Mahsut; Keiana Dunn; Douglas Johns; Stephen Previs; Brian Hubbard; Thomas Roddy; Merck & Co., Rahway, NJ
- WP 666 **Detection of Phosphatidylethanol Homologues in Liver Samples as Biomarkers for Alcohol Treated Rats and Mice**; Simon Ashton¹; Neil J Loftus¹; Alan Barnes¹; Filippos Michopoulos^{2,3}; Ian D. Wilson²; Georgios Theodoridis³; Cheng Ji⁴; Neil Kaplowitz⁴; ¹Shimadzu, Manchester, UK; ²Astra Zeneca, Alderley Park, Cheshire, UK; ³University of Thessaloniki, Thessaloniki, Greece; ⁴University of Southern California, Los Angeles, CA
- WP 667 **Determination of an Endogenous Biomarker - 4β-Hydroxycholesterol - in K₂EDTA Human Plasma by LC-MS/MS**; Weisheng Lin¹; Wei Zhang¹; Jing Ke¹; Harry Zhao¹; Zhongping (John) Lin¹; Mike-Qingtao Huang²; Naidong Weng²; ¹Frontage Laboratories, Malvern, PA; ²Johnson & Johnson Pharmaceutical R & D, LLC, Raritan, NJ
- WP 668 **Validation of 25-Hydroxyvitamin D3 an Endogenous Biomarker in Human Serum using LC/APCI/MS/MS**; Themis Flarakos; Marie-Noelle Lepage; Lorella Di Donato; CIRION Clinical Trial Services Inc., Laval, Canada
- WP 669 **Quantification of LTE4 in Human Urine with a 2 pg/mL LLOQ using a UPLC and LC/MS/MS**; Lin Tan¹; Troy Voelker¹; Katherine Wright²; Joe Palandra²; ¹Tandem Labs, Salt Lake City, UT; ²Pfizer, Andover, MA
- WP 670 **Determination of Dopamine, Serotonin and their Metabolites in the Striatum Tissues from Rat and Mouse Brain Using UPLC-MS/MS**; Changyu Quang¹; Alison E. Johnson¹; Nichole R. Myers¹; William C. Nethero¹; Melissa J. Beck¹; Farhad Sayyarpour¹; Kuldeep D. Dave²; ¹WIL Research, Ashland, OH; ²The Michael J. Fox Foundation, New York, NY
- WP 671 **An Ultra-sensitive and Simple Approach to Analyze Biomarker-Aldosterone in a Super Micro-volume of Rat Plasma at Low Picogram**; Jiongwei Pan; Xi Chen; Bibo Xu; Primer Analytical Solutions Corp., Princeton, NJ
- WP 672 **Quantification of Thyroxine (T4) in Dried-serum Spots by Tandem Mass Spectrometry**; Victor De Jesus¹; Donald H. Chace²; Elizabeth Hall¹; Tamara Ganka¹; Shannon O'Brien¹; Joanne Mei¹; Carla Cuthbert¹; ¹Centers for Disease Control and Prevention, Atlanta, GA; ²Pediatrics Analytical, Pittsburgh, PA
- WP 673 **Quantifying Glutathione as a Urinary Biomarker**; Charmion Cruickshank; Troy Wood; University at Buffalo, Buffalo, NY
- WP 674 **Quantification of 7α-Hydroxy-4-cholesten-3-one, a Disease Marker for Cerebrotendinous Xanthomatosis, in Human Plasma Using Novel Derivatization Chemistry and LC-MS/MS**; Andrea Debarber¹; Michal Star-Weinstock²; Robert Steiner¹; Babu Purkayastha²; ¹OHSU, Portland, OR; ²AB SCIEX, Framingham, MA
- WP 675 **Pseudo-SRM Conditions Improve Detection of N²,3-ethenoguanine in DNA**; Esra Mutlu¹; Leonard Collins¹; Matthew Stout²; Patricia Upton¹; Laura Daye¹; Darrell Winsett³; Gary Hatch³; Paul Evansky³; James Swenberg¹; ¹UNC - Chapel Hill, Chapel Hill, NC; ²NIEHS NTP, Research Triangle Park, NC; ³USEPA NHEERL, Research Triangle Park, NC
- WP 676 **Organ- and Lesion-dependent Biases in the Spectrum of Inflammation-induced DNA Damage in Colon and Liver from Helicobacter hepaticus-infected Rag2-deficient Mice**; Wenjie Ye¹; Aswin Mangerich¹; James Fox^{1,3}; Peter Dedon^{1,2}; Steven Tannenbaum^{1,2}; Koli Taghizadeh²; Erin Prestwich¹; John Wishnok¹; Liang Cui⁴; ¹Department of Biological Engineering, MIT, Cambridge, MA; ²Center for Environmental Health Science, MIT, Cambridge, MA; ³Division of Comparative Medicine, MIT, Cambridge, MA; ⁴SMART Centre, MIT, Singapore, Singapore
- WP 677 **Development of HILIC/MS/MS Method for Simultaneous Measurement of Tobacco-specific Nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL) and Its Glucuronide NNAL-N-Glucuronide**; John Lee^{1,2};

- Yang Xia¹; ¹CDC/NCEH/DLS, Atlanta, GA; ²Battelle, Atlanta, GA
- WP 678 **Quantification of F2-isoprostanes in Urine by a Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS) Method**; Alireza Arabshahi; Jeevan K. Prasain; Scott Sweeny; Doyle Ray Moore II; Stephen Barnes; *University of Alabama at Birmingham, Birmingham, AL*
- WP 679 **Quantification of Reduced and Oxidized Glutathione without Calibration Curves by LC/MS/MS using Speciated Isotope Dilution Mass Spectrometry**; Timothy Fahrenholz¹; Scott Faber²; Hemasudha Chatragadda¹; Yosip Pineda¹; John Kern¹; Matt Pamuku³; H. M. Skip Kingston¹; ¹Duquesne University, Pittsburgh, PA; ²The Children's Institute, Pittsburgh, PA; ³Applied Isotope Technologies, Sunnyvale, CA
- WP 680 **Identification and Characterization of Serum Albumin Adducts of 2-Amino-1-methyl-6-phenylimidazo[4,5-b]pyridine by Ultra Performance Liquid Chromatography/Mass Spectrometry**; Lijuan Peng; Robert Turesky; *Wadsworth Center, NYS Department of Health, Albany, NY*
- WP 681 **Single Extraction Multicolumn LC-MS Analysis for Quantitation of Chemically Diverse Biomarker Candidates of Insulin Resistance**; Klaus Peter Adam; Andrew Thompson; Walter Gall; Matthew Mitchell; Michael Milburn; John Ryals; *Metabolon Inc., Durham, NC*
- WP 682 **Development of a LC/MS-Based Assay for Simultaneous Analysis of Corticosterone and Drug Molecules and the Application in PK/PD Studies**; Yu Tian; Youngjae Kim; Rachel Twomey; Li Chun Wang; Kevin Cusack; Robert Stoffel; Lisa Olson; Roderic Cole; *Abbott Laboratories, Worcester, MA*
- WP 683 **Determination of 2-Hydroxyglutarate in Glioma Primary Cell Cultures by HPLC-MS/MS Using In-Line SAX Coupled with Ion Pair Reverse Phase Chromatography**; Melissa D. Carter; M. Wade Calcutt; J. Gerardo Valadez; Vandana K. Grover; Sunday A. Abiria; Michael K. Cooper; David L. Hachey; *Vanderbilt University, Nashville, TN*
- WP 684 **Reproducibility of Comprehensive Two-dimensional Gas Chromatography Mass Spectrometry**; Aiqin Fang; Xiang Zhang; *University of Louisville, Louisville, KY*
- WP 685 **High-throughput Determination of Urea and Glucose in Serum Samples by High Performance Liquid Chromatography Tandem Triple Quadrupole Mass Spectrometry**; Xiaorong Ran; Tao Bo; *Agilent Technologies (China), Beijing, CHINA*
- WP 686 **Liquid Chromatography-Mass Spectrometry of Pre-ionized Girard P Derivatives for Quantifying Estrone and its Metabolites in Postmenopausal Women's Serum**; Kannan Rangiah¹; Sumit Shah¹; Eugene F. Ciccimaro²; Anil Vachani¹; Clementina Mesaros¹; Ian A. Blair¹; ¹University of Pennsylvania, Philadelphia, PA; ²ThermoFisher Scientific, Somerset, NJ
- WP 687 **Quantitative Analysis of 18- β -Glycyrrhetic Acid, Cortisol and Cortisone by LC-MS/MS for Determination of 11 β -HSD2 Enzyme Activity in Patients**; Margret Thorsteinsdottir¹; Baldur Bragi Sigurdsson²; Arndís Sue-Ching Löve¹; Helga Ágústa Sigurjónsdóttir³; ¹University of Iceland, Reykjavík, Iceland; ²ArcticMass, Reykjavík, Iceland; ³Landspítali University Hospital, Reykjavík, Iceland
- WP 688 **Development of a Multiplex MRM Method for Measuring Proteins in High Density Lipoprotein Particles**; Thomas J. Lukas; *Northwestern University, Chicago, IL*
- WP 689 **Acyl-coenzyme A Profile Study in Tissues of Wild Type and Short-Chain hydroxyacyl-CoA Dehydrogenase (SCHAD) Knockout Mice by Tandem Mass Spectrometry**; Jie Chen; Andrew Palladino; Staci Kallish; Srinivas Narayan; Michael Bennett; *Children's Hospital of Ph, Philadelphia, PA*
- WP 690 **Surrogate Analyte Parallelism of Endogenous Amino Acids in Plasma by LC/MS/MS**; Barry R. Jones¹; Kristen M. Bearup¹; Gary A. Schultz¹; James A. Eckstein²; Bradley L. Ackermann²; ¹Advion BioServices, Inc., Ithaca, NY; ²Eli Lilly & Company, Indianapolis, IN
- SYSTEMS BIOLOGY II; 691 - 710**
- WP 691 **Towards Dissecting the Role and Substrates of Yeast Ubiquitin Receptor Proteins: A Comparison using SILAC and TMT Labeling**; Lily Ting; Wilhelm Haas; Daniel J. Finley; Steven P. Gygi; *Harvard Medical School, Boston, MA*
- WP 692 **Illustrating Dynamics of Metabolic System using High-throughput Metabolomics and Dynamic Correlation Analysis**; Daichi Yukihiro; Daisuke Miura; Hiroyuki Wariishi; *Kyushu University, Fukuoka, JAPAN*
- WP 693 **Proteomics of Dicer-knockout SILAC Mice Reveals Altered Lipid Metabolism in Small Intestine**; Tai-Chung Huang¹; Nandini Sahasrabudde¹; Yi Yang¹; Raghothama Chaerkady¹; Jonathan Peterson¹; Guang William Wong¹; Vadiraja Bhat²; Akhilesh Pandey¹; ¹Johns Hopkins University School of Medicine, Baltimore, MD; ²Agilent Technologies, Wilmington, DE
- WP 694 **Mapping Microbial Metabolism Using Untargeted Metabolite Profiling**; Richard Baran; Benjamin Bowen; Nicholas Bouskill; Eoin Brodie; Steven Yannone; Trent Northen; *LBNL, Berkeley, CA*
- WP 695 **A Systems Analysis of Pathways in Breast Cancer**; Xinyan Wu; Raghothama Chaerkady; Nandini Sahasrabudde; Santosh Renuse; Saraswati Sukumar; Ben H. Park; Akhilesh Pandey; *Johns Hopkins University, Baltimore, MD*
- WP 696 **Phosphoproteome Profiling of HEK 293 Cells Exposed to High NaCl**; Rong Wang; Joan D. Ferraris; Guanghui Wang; Marjan Gucek; Maurice M. Burg; *NHLBI, NIH, Bethesda, MD*
- WP 697 **Dynamics of Subcellular Proteomes during Brain Development**; Dan McClatchy; Lujian Liao; Sung Kyu Park; John Yates; *The Scripps Research Institute, La Jolla, CA*
- WP 698 **Proteome-wide Profiling of Deubiquitylating Enzymes in *Saccharomyces Cerevisiae* by Quantitative Mass Spectrometry**; Jon Wriedt Poulsen; Peter Henriksen; Kathrine Beck Sylvestersen; Christian Toft Madsen; Michael Lund Nielsen; *CPR, University of Copenhagen, Copenhagen, Denmark*
- WP 699 **A Proteomic Investigation of Intermediate HSV-1 Virion Structures Containing the Inner Tegument Protein pUL37**; Todd M.

- WP 700 Greco; Aaron E. Lin; Ileana M. Cristea; *Princeton University, Princeton, NJ*
Novel Protein Interactors of P53?; Steve Nguyen^{1,2}; Sofia Maiciera²; Matthias Mann²; ¹*Pfizer, Mystic, CT*; ²*Max Planck Institute for Biochemistry, Muenchen, Germany*
- WP 701 **Quantitative Proteomic Dissection of the Dynamic Myddosome**; Harsha P Gunawardena^{1,2}; Yanbao Yu^{1,2}; Xian Chen^{1,2}; ¹*Dept of Biochemistry & Biophysics UNC Chapel Hill, Chapel Hill, NC*; ²*UNC Proteomics Pathways Discovery Core, Chapel Hill, NC*
- WP 702 **Absolute Quantification and Stoichiometry Determination of Protein Complexes Involved in Sister Chromatid Cohesion**; Johann Holzmann¹; Johannes Fuchs¹; Georg Petzold¹; Peter Pichler²; Jan-Michael Peters¹; Karl Mechtler^{1,3}; ¹*Research Institute of Molecular Pathology, Vienna, Austria*; ²*Christian Doppler Laboratory for Proteome Analysis, Vienna, Austria*; ³*Institute of Molecular Biotechnology, Vienna, Austria*
- WP 703 **Molecular Architecture and Protein Interaction Networks of Dense-core Secretory Vesicles from Human Adrenal Pheochromocytoma: Implications in Stress and Neuropeptide Secretion**; Steven Bark¹; Jill Wegrzyn¹; Qi Ma²; June Snedecor²; Laurent Taupenot³; Daniel O'Connor³; Vivian Hook¹; ¹*UCSD Skaggs School of Pharmacy, La Jolla, CA*; ²*UCSD Bioinformatics Graduate Program, La Jolla, CA*; ³*UCSD Department of Medicine, La Jolla, CA*
- WP 704 **Characterization of the Human Sigma-1 Receptor Interactome Using Label-Free Quantitative Chemical Proteomics**; Hongbo Gu; Carthene Bazemore-Walker; *Brown University, Providence, RI*
- WP 705 **Proteomic Analysis of LEDGF/p75 Interactions with the Nuclear Proteins**; Robert L. Graham¹; Christopher Mckee²; Michael J Sweredoski¹; Mamuka Kvaratskhelia²; Sonja Hess¹; ¹*Caltech, Pasadena, CA*; ²*The Ohio State University, Columbus, OH*
- WP 706 **Dynamic Analysis of the Scaffold Protein ShcA-mediated Signaling Network by Targeted Proteomics**; Yongq Zheng¹; Cunjie Zhang¹; Soliman Mohamed¹; Adrian Pasculescu¹; Ryan Williams Williams¹; Lorne Taylor¹; Stephen A. Tate²; Yue Dai¹; Karen Colwill¹; James W. Dennis¹; Tony Pawson¹; ¹*Samuel Lunenfeld Research Institute, Toronto, Canada*; ²*AB Sciex, Toronto, Canada*
- WP 707 **SWATH Quantitation of Protein Phosphatase Interactions across the Cell Cycle**; Nicole St-Denis¹; Brett Larsen¹; Stephen A Tate²; Ron Bonner²; Zhen Yuan Lin¹; Ludovic Gillet³; Pedro Navarro³; Ruedi Aebersold³; Anne-Claude Gingras¹; ¹*Samuel Lunenfeld Research Institute, Mount Sinai H, Toronto, Canada*; ²*AB SCIEX, Concord, ON*; ³*IMSB-ETH Zurich, Zurich, Switzerland*
- WP 708 **Impact of Histone Modifications on Global Protein Expression in *Saccharomyces cerevisiae***; Linan Wang; Neha Rastogi; Mark R. Parthun; Michael A. Freitas; *Ohio State University, Columbus, OH*
- WP 709 **Sequence-specific Capture of Protein-DNA Complexes for Mass Spectrometric Protein Identification**; Lloyd Smith¹; Siyuan Chen¹; Marla Chesnik²; Lisa Cirillo²; Mark A Scalf¹; Regina Cole²; Mindy Dwinell²; Brian Frey¹; Hector Guillen Ahlers²; Brian Halligan²; Rachel Knoener¹; Gloria Kreitinger¹; Jozef Lazar²; Mark Levenstein¹; Amy Ludwig-Kubinski²; Isaac Matus²; Shama Mirza²; Ashlan Musante¹; Akua Oduro²; Michael Zickus²; Molly Pellitteri-Hahn²; Michael R. Shortreed¹; Andrew Vallejos²; Cheng-Hsien Wu¹; Yuan Yuan¹; Michael Olivier²; ¹*University of Wisconsin, Madison, WI*; ²*Medical College of Wisconsin, Milwaukee, WI*
- WP 710 **Bottom Up, Middle Down and Genomic Analysis of Histone Variants, Their Nucleosomal Binding Partners and Post-Translational Modifications**; Nicolas L. Young; Gary Leroy; Peter A. Dimaggio; Barry Zee; Benjamin Garcia; *Princeton University, Princeton, NJ*

7:30-8:00 amAll Thursday posters should be set
 10:30 am-2:30 pm All poster authors should be present
 11:45 am-12:15 pm . Lunch break for odd-numbered posters
 12:15-12:45 pm.....Lunch break for even-numbered posters
 After 2:30 pm Remove all Thursday posters

Ion Spectroscopy; 001 - 012
 Instrumentation: General; 013 - 041
 Instrumentation: New Concepts; 042 - 069
 Instrumentation: New Developments in Mass Analyzers;
 070 - 087
 LC-MS: Software; 088 - 092
 LC-MS: Instrumentation; 093 - 107
 LC-MS: Sample Preparation: Small Molecule, 108 - 136
 MALDI: Sample Preparation; 137 - 162
 Small Molecule: Quantitative Analysis; 163 - 185
 Drug Metabolism: High Throughput Analysis; 186 - 202
 Drug Metabolism: High Throughput/Robotics; 203 - 218
 Metabolomics: General II; 219 - 238
 Metabolomics: Untargeted Profiling II; 239 - 259
 Lipids: Profile Analysis; 260 - 289
 Lipids: Quantitative Analysis; 290 - 298
 Agriculture; 299 - 313
 Flavors and Fragrances; 314 - 316
 Natural Products II; 317 - 336
 Energy: Biofuels and Algae; 337 - 351
 Environmental Analysis: Hydrocarbons and DOM; 352 - 360
 Forensics: Toxicological Analysis; 361 - 382
 Informatics: Workflow and Data Management; 383 - 413
 Imaging MS: Method Development - Sample Preparation;
 414 - 426
 Imaging MS: Method Development - New Methods;
 427 - 445
 Peptides: Ion Activation/Dissociation; 446 - 457
 Peptides: Quantitative Analysis: Label Free II; 458 - 476
 Peptides: PTM Identification III; 477 - 504
 Phosphopeptides: Quantitative Analysis; 505 - 528
 Proteins: General; 529 - 549
 Proteins: Conformation Analysis; 550 - 563
 Glycoproteins: New Approaches; 564 - 586
 Proteomics: Identification and Quantification in Clinical
 Applications; 587 - 607
 Proteomics: New Approaches; 608 - 615
 Proteomics: Applications II; 616 - 633
 Protein Therapeutics: Quantitative Analysis; 634 - 646
 Immunology; 647 - 655
 Recombinant Proteins: Quantitative Analysis; 656 - 658
 Proteins: Aggregation and Amyloid Formation; 659 - 671
 Biomarkers: Quantitative Analysis; 672 - 698

ION SPECTROSCOPY; 001 - 012

- ThP 001 **Infrared Multiple Photon Dissociation (IRMPD) Spectroscopy of Oxazine Dyes;** Robert J. Nieckarz¹; Jos Oomens²; Giel Berden²; Pavel Sagulenko¹; Vladimir Frankevich¹; Renato Zenobi¹; ¹ETH Zürich, Zürich, Switzerland; ²FOM Rijnhuizen, Nieuwegein, Netherlands
- ThP 002 **Tandem-MS and IRMPD-Spectroscopy of Solvated Organozinc Cations in the Gas Phase: Structure Elucidation of Negishi Cross Coupling Reagents;** Frank Dreier¹; Jos Oomens^{2,4}; Anthony J.H.M. Meijer³; Barry T. Pickup³; Richard F.W. Jackson³; Mathias Schaefer¹; ¹Department of Chemistry University of Cologne, Koeln, GER; ²University of Amsterdam, Amsterdam, NL; ³Department of Chemistry University of Sheffield, Sheffield, UK; ⁴FOM

Institute for Plasma Physics Rijnhuizen, Nieuwegein, NL

- ThP 003 **Infrared Multiple Photon Dissociation Action Spectroscopy of Sodium Cationized Halouracils: Effects of Sodium Cationization on Gas-Phase Conformation;** C. M. Kaczan¹; R. R. Wu¹; A. I. Rathur¹; Y. Chen¹; C. A. Austin¹; J. Oomens^{2,3}; G. Berden²; M. T. Rodgers¹; ¹Wayne State University, Detroit, MI; ²FOM Institute for Plasma Physics "Rijnhuizen", Nieuwegein, The Netherlands; ³Van't Hoff Institute for Molecular Sciences, Amsterdam, The Netherlands
- ThP 004 **Interconversion of a₂-ion Isomers Derived from Protonated Trialanine: IRMPD Spectroscopy and Density Functional Theory Calculations;** Junfang Zhao^{1,2}; Udo Verkerk^{1,2}; Jeffrey Steill⁵; Chi-Kit Siu³; Jos Oomens^{4,6}; Alan C. Hopkinson^{1,2}; K W Michael Siu^{1,2}; ¹York University, Toronto, Canada; ²Centre for Research in MS, Toronto, ON; ³City University of Hong Kong, Hong Kong, China; ⁴FOM Rijnhuizen, Nieuwegein, Netherlands; ⁵Sandia National Laboratories, Livermore, CA; ⁶University of Amsterdam, Amsterdam, Netherlands
- ThP 005 **Structure of Radical Anions and Cations of Cysteine Derivatives Studied by Ion Spectroscopy: A Case Study of N-Acetyl Cysteine;** Sandra Osburn¹; Giel Berden²; Jos Oomens²; Richard A. J. O'hair³; Victor Ryzhov¹; ¹Northern Illinois University, Dekalb, IL; ²FOM Rijnhuizen, Nieuwegein, the Netherlands; ³University of Melbourne, Victoria, Australia
- ThP 006 **IRMPD of Triply Charged Lanthanum-Peptide Complexes;** Irine Saminathan¹; Junfang Zhao¹; Udo Verkerk¹; Jos Oomens^{2,3}; Alan Hopkinson¹; K. W. Michael Siu¹; ¹CRMS, Chemistry, York University, Toronto, ON; ²FOM Rijnhuizen, Nieuwegein, Netherlands; ³University of Amsterdam, Amsterdam, THE Netherlands
- ThP 007 **Vibrational Spectroscopy of Protonated Amino Acids and Peptides and Their Collision-Induced Dissociation Products in the Hydrogen Stretching Region;** Kerim Gulyuz; Corey Stedwell; Da Wang; Nicolas Polfer; University of Florida, Gainesville, FL
- ThP 008 **Studying of the Optical Properties of Fluorescent Biological Tags in the Gas Phase;** Pavel Sagulenko; Vladimir Frankevich; Renato Zenobi; ETH Zurich, Zurich, Switzerland
- ThP 009 **What Happens to Green Fluorescent Protein upon Transfer from Solution to the Gas Phase?** Vladimir Frankevich; Konstantin Barylyuk; Robert J. Nieckarz; Pavel Sagulenko; Renato Zenobi; ETH Zurich, Zurich, Switzerland
- ThP 010 **Vacuum Ultraviolet and Extreme Ultraviolet Photoionization Mass Spectrometry of Biomolecules;** Elliot Bernstein; Joong-Won Shin; Feng Dong; Michael Grisham; Jorge Rocca; Colorado State University, Fort Collins, CO
- ThP 011 **H₂ tagging - A Versatile New Tool for the Vibrational Characterization of Peptides;** Christopher Leavitt; Michael Kamrath; Etienne Garand; Arron Wolk; Peter Jordan; Scott Miller; Mark Johnson; Yale University, New Haven, CT
- ThP 012 **Mass Selected Resonant (1+1)-Photodissociation Spectroscopy of Different Iodine Containing Alkanes;** Hannes Schüttig;

Jurgen Grotemeyer; *Christian-Albrechts-Univ, Kiel, Germany*

INSTRUMENTATION: GENERAL; 013 - 041

- ThP 013 **Comparison of Ion-Transfer Devices Operated at Elevated Pressures;** Vadym Berkout; Vladimir M. Doroshenko; *MassTech, Inc., Columbia, MD*
- ThP 014 **Does High MS Scan Rate Correlate with Increased Identifications?** Sara B. Austin; Anna E. Larson; Aaron R. Ledvina; Jason D. Russell; Michael S. Westphall; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- ThP 015 **The Development of an Integrated Double Junction Interface for Phosphate Buffer Capillary Electrophoresis Electrospray Ionization Mass Spectrometry;** Ju-Li Huang; Guor-Rong Her; *National Taiwan University, Taipei, Taiwan*
- ThP 016 **Optimization of Flow Injection Analysis Parameters for Effective Coupling with Electrospray Ionization – Mass Spectrometry Detection;** Hui Fan; Kevin Schug; *University of Texas Arlington, Arlington, TX*
- ThP 017 **A Comparison of Collision Cells for Threshold Collision-Induced Dissociation Measurements;** Vladimir Romanov; Udo H. Verkerk; Alan C. Hopkinson; K W Michael Siu; *Centre for Research in MS/Chem.Dept. York Univ., Toronto, Canada*
- ThP 018 **Reducing Filament Warping in Mass Spectrometer Filaments;** John Manura; Ronald Shomo; Christopher W. Baker; *Scientific Instrument Services, Ringoes, NJ*
- ThP 019 **Comparison of EID and SORI-CID on Singly Charged Mononucleotides;** Viet Hung Nguyen; Carlos Afonso; Jean-Claude Tabet; *University Paris VI (UPMC), Paris Cedex 05, France*
- ThP 020 **A New Numerical Code for Calculation of Electric Field and Simulation of Ion Motion in FT-ICR with Arbitrary Electrode Geometry;** Alexander Misharin¹; Alexander Popov²; ¹*MassTech Inc., Columbia, MD*; ²*MSU, Moscow, Russia*
- ThP 021 **A Modular, High Performance Mass Spectrometry Simulation System;** Keith Richardson¹; John B. Hoyes¹; David Langridge¹; Marc V. Gorenstein²; Dan Golick²; Steve Ciavarini²; Scott Geromanos²; ¹*Waters, Manchester, UK*; ²*Waters Corporation, Milford, MA*
- ThP 022 **Development of a Periodic-focusing DC Ion Funnel and Accumulation Device for an Electrospray Ionization Source;** Kyle L. Fort; Joshua A. Silveira; David H. Russell; *Texas A&M University, College Station, TX*
- ThP 023 **Dynamics Simulation of Larger Molecules; Differential Mobility Analyzer with Newly Designed Mass Spectrometer Inlet;** Yi She; Chenxi Zhu; Eiko Koizumi; Hideya Koizumi; *Arkansas State University, State University, AR*
- ThP 024 **High Dynamic Range Ion Detection Using Channel Electron Multipliers;** Paul Mitchell; Stephen Ritzau; Lenny Erickson; *Photonis USA, Inc., Sturbridge, MA*
- ThP 025 **Optimization of the Detection System for Fast Scanning Linear Ion Trap Mass Spectrometers;** Raman Mathur; Philip M. Remes; Michael G. Konicek; John E. P. Syka; Julie Horner; August Specht; Jae C. Schwartz; *Thermo Fisher Scientific, San Jose, CA*

- ThP 026 **Computer Simulation of Ion Trajectories in Atmospheric Pressure Electrospray Ionization (AP-ESI);** Kenichiro Saito¹; Yury Dessiatierik²; Eiko Koizumi¹; Hideya Koizumi¹; ¹*Arkansas State University, State University, AR*; ²*Colorado State University, Fort Collins, CO*
- ThP 027 **Operational Parameters, Considerations, and Design Decisions for Resource-Constrained Ion Trap Mass Spectrometers;** Ryan M. Danell¹; Friso H.W. Van Amerom²; Veronica Pinnick³; Robert J. Cotter³; William Brinckerhoff⁴; Paul Mahaffy⁴; ¹*Danell Consulting, Greenville, NC*; ²*SRI International, St Petersburg, FL*; ³*Middle Atlantic MS Laboratory, Baltimore, MD*; ⁴*NASA GSFC, Greenbelt, MD*
- ThP 028 **Identification of the Neutral Products in CID via Analysis of the Distributions of their Output Signal Amplitude at the Detector;** Victor Buridon¹; Khalid El Farkh¹; Mahdi M. Harb¹; Cécile Teyssier¹; Hassan Abdoul-Carime¹; Bernadette Farizon¹; Michel Farizon¹; Tilmann D. Märk²; ¹*CNRS/IN2P3, UMR5822, IPNL - Université Lyon 1, Villeurbanne, France*; ²*Leopold Franzens Universität, IfP, Innsbruck, Austria*
- ThP 029 **Monoisotopic Precursor Selection (MIPS) Increases Protein Identifications in iTRAQ Experiments;** Robert O'Meally; Robert Cole; *Johns Hopkins School of Medicine, Baltimore, MD*
- ThP 030 **RF Amplifier Optimization for Improved Resolution in Microscale Cylindrical Ion Traps;** Derek Wolfe; Dmitriy Chernookiy; Tina Stacy; Matthew Verber; Collin McKinney; J. Michael Ramsey; *University of North Carolina, Chapel Hill, NC*
- ThP 031 **Online Mass Spectrometric Analysis of Proteins/Peptides Following Electrolytic Cleavage of Disulfide Bonds;** Yun Zhang; Howard D. Dewald; Hao Chen; *Ohio university, Athens, OH*
- ThP 032 **Charging Megadalton Macromolecules by Electrospray Ionization. A Charge Detection Mass Spectrometry Study;** Tristan Doussineau; Rodolphe Antoine; Philippe Dugourd; *LASIM CNRS Univ Lyon 1, Villeurbanne, France*
- ThP 033 **Performance of a New Sensitive LC-IMS-QTOF Platform for Proteomics Measurements;** Yehia Ibrahim; William F. Danielson; David Prior; Erin Baker; Ruwan Kurulugama; Gordon Anderson; Tom Seim; Divakara (Bhuvan) Meka; Richard D. Smith; Mikhail Belov; *Pacific Northwest National Laboratory, Richland, WA*
- ThP 034 **New Design Concepts for Magnetic TOF Detectors Lead to an Order of Magnitude Increase in Both Linearity and Operational Life;** Dick Stresau; Yair Benari; Kevin Hunter; Wayne Sheils; Peter Raffin; *SGE Analytical Science (ETP Electron Multipliers), Ermington, (Sydney), NSW, Australia*
- ThP 035 **Parametric Studies of Condensed Phase Membrane Introduction Mass Spectrometry (CP-MIMS): Membrane Types/Geometries, Acceptor Phase Modifications and Continuous On-Line Quantitation Techniques;** Kyle D. Duncan^{2,4}; Bruce R. Todd³; Erik T. Krogh^{1,4}; Christopher G. Gill^{1,4}; ¹*Vancouver Island University, Nanaimo, BC, Canada*; ²*University of Victoria, Victoria, BC, Canada*; ³*The Instrument*

- Works, Vancouver, BC, Canada; ⁴Appl. Env. Res. Labs.(AERL), Nanaimo, BC, Canada
- ThP 036 **Ion Introduction through Discontinuous Atmospheric Pressure Interface with Bent Pathway**; Tsung-Chi Chen; Sandilya Garimella; Wei Xu; Zheng Ouyang; *Purdue University, West Lafayette, IN*
- ThP 037 **Development of Electrospray and Atmospheric Pressure Chemical Ionization Sources for the Analysis of Thermally Desorbed Human Breath Samples**; James Reynolds; Cristina Guallar-Hoyas; Helen Martin; Matthew Turner; Colin Creaser; Paul Thomas; *Loughborough University, Loughborough, UK*
- ThP 038 **Desorption Dynamics and Internal Energies of Laser-Desorbed Neutral Molecules Determined by Vacuum Ultraviolet Photoionization**; Oleg Kostko¹; Lynelle K. Takahashi^{1,2}; Stephen R. Leone^{1,2}; Musahid Ahmed¹; ¹LBNL, Berkeley, CA; ²UC Berkeley, Berkeley, CA
- ThP 039 **Off-Resonance Excitation for Fragmentation in a Low Pressure Linear Ion Trap**; James Hager; *AB Sciex, Concord, Canada*
- ThP 040 **Space Charge Effects in a Linear Quadrupole Ion Trap with Mass Selective Axial Ejection: Effects of Operating Conditions**; Hui Qiao; Donald J. Douglas; *University of British Columbia, Vancouver, Canada*
- ThP 041 **Chiral Analysis of DOPA and MDOPA by EKC/MS using Both Low Concentration and High Concentration Nonvolatile Sulfated β -Cyclodextrin**; Shi-Hua Hung; Wen-Shuo Cheng; Guor-Rong Her; *National Taiwan University, Taipei, Taiwan*
- INSTRUMENTATION: NEW CONCEPTS; 042 - 069**
- ThP 042 **A Periodic-focusing DC Ion Funnel Interface for a Variable-temperature Ion Mobility Spectrometer**; Joshua A. Silveira; Chaminda M. Gamage; David H. Russell; *Texas A&M University, College Station, TX*
- ThP 043 **Photofragmentation of Mobility-Resolved Isomeric Carbohydrate Ions from a Mixture**; Steven M. Zucker; Sunyoung Lee; Nathaniel Webber; Stephen J. Valentine; James P. Reilly; David E. Clemmer; *Indiana University, Bloomington, IN*
- ThP 044 **Considerations for the Design of an 8-Channel Spatially Multiplexed Ion Mobility-Mass Spectrometer**; Jody May; Sevugarajan Sundarapandian; Kyle Osborne; John A. Mclean; *Vanderbilt University, Nashville, TN*
- ThP 045 **Development of a Helical Dipole-based Atmospheric Interface Setup for Enhanced Ion Transfer Efficiency**; Tamas Majoros¹; Daniel Szalay²; Gyorgy Hars³; Zoltan Takats⁴; ¹Semmelweis University, Budapest, HUNGARY; ²Medimass Ltd., Budapest, Hungary; ³Budapest University of Technology and Economics, Budapest, Hungary; ⁴Justus-Liebig-University, Giessen, Germany
- ThP 046 **Enhancing the Sensitivity of a Quadrupole Time-of-Flight Mass Spectrometer using a Novel Conjoined Ion Guide**; Kevin Giles; Martin Green; Jason L. Wildgoose; Martin Palmer; *Waters Corporation, Manchester, UK*
- ThP 047 **Development of Resistive Glass Multi-Capillary Inlet Tubes for Enhanced Ion Transport**; Paula Holmes; Bruce Laprade; *Photonis USA, Sturbridge, MA*
- ThP 048 **A Complete Fluid Dynamics Package for Aerodynamic Lens Simulation with GPU: Affordable Technique for Future Inlet Technology**; Eiko Koizumi¹; Hai Jiang¹; Peter Ta Reilly²; Hideya Koizumi¹; ¹Arkansas State University, State University, AR; ²Washington State University, Pullman, WA
- ThP 049 **Recent Developments in Proton-Transfer-Reaction Mass Spectrometry Leading to New Fields of Application (e.g. Illicit and Designer Drugs Detection)**; Christian Lindinger¹; Lukas Maerk¹; Bishu Agarwal²; Fredrik Petersson^{1,2}; Simone Juerschik^{1,2}; Philipp Sulzer¹; Alfons Jordan¹; Peter Watts³; Christopher A. Mayhew³; Kurt Becker⁴; Tilmann D. Maerk^{1,2}; ¹IONICON Analytik, Innsbruck, Austria; ²Institut für Ionenphysik und Angewandte Physik, Innsbruck, Austria; ³School of Physics and Astronomy, Birmingham, UK; ⁴Polytechnic Institute, New York, NY
- ThP 050 **Higher Energy Collision Induced Dissociation in the Existing High Pressure Quadrupole Region of a Stand-Alone Ion Trap Mass Spectrometer**; Philip M. Remes¹; Jae C. Schwartz¹; Graeme Mcalister²; Julie Horner¹; Terry Zhang¹; Reiko Kiyonami¹; August Specht¹; Joshua J. Coon²; ¹Thermo Fisher Scientific, San Jose, CA; ²Univ of Wisconsin-Madison, Madison, WI
- ThP 051 **Detection of Neutral and Charged Fragments via an Event-by-Event Approach of Collision Induced Dissociation (CID) of Mass Selected Ions**; Cécile Teyssier¹; Victor Buridon¹; Khalid El Farkh¹; Mahdi M. Harb¹; Hassan Abdoul-Carime¹; Bernadette Farizon¹; Michel Farizon¹; Tilmann D. Märk²; ¹CNRS/IN2P3, UMR5822, IPNL - Université Lyon 1, Villeurbanne, France; ²Leopold Franzens Universität, IfP, Innsbruck, Austria
- ThP 052 **Novel Method of Detecting High Explosives Using Tandem Mass Spectrometry**; Kevin Schultze; Mark Ridgeway; Gary L. Glish; *University of North Carolina, Chapel Hill, NC*
- ThP 053 **Methods of Enriching Low Abundance MS² Products Ions for Tandem Mass Spectrometric Analysis**; Chasity B. Love¹; Frank A. Londry²; Yu Xia¹; ¹Purdue University, Lafayette, IN; ²AB SCIEX, Concord, Ontario, Canada
- ThP 054 **FTIR Experiments on Mass Selected Cations by Counter-Ion Introduction Into an Inert Argon Matrix**; Nathan Roehr; Jan Szczepanski; Nicolas Polfer; *University of Florida, Gainesville, FL*
- ThP 055 **Parameterisation of a Novel Liquid Sampling System for Imaging of Biological Systems**; Andrew Williams; Gareth Brenton; Ruth Godfrey; John Tregembo; *Swansea University, Swansea, UK*
- ThP 056 **Laboratory Mass Spectrometry Experiments for the Interpretation of Mass Spectra from Water Ice Particles Measured *in-situ* Onboard Cassini**; Bernd Abel; Alexander Beinsen; *Ostwald-Institute for Physical Chemistry, Leipzig, Germany*
- ThP 057 **New Concept for the Design of Highly Effective Magnetic Shields for TOF-MS**; Kevin Hunter; Dick Stresau; Wayne Sheils; *SGE Analytical Science (ETP Electron Multipliers), Ermington, (Sydney), NSW, Australia*

- ThP 058 **Optimization of Linearity and Lifetime of MCP Ion Detector for TOF-MS;** Toshiyuki Uchiyama; *Hamamatsu Photonics K.K., Iwata, Japan*
- ThP 059 **Duty Cycle Manipulation of Digital Quadrupoles—the Enabling Technology for High Resolution Time-of-Flight Mass Spectrometry at $m/z > 20,000$;** Jeonghoon Lee¹; Hideya Koizumi²; Peter T. A. Reilly¹; ¹Washington State University, Pullman, WA; ²Arkansas State University, State University, AR
- ThP 060 **New Method of Ion Motion Simulation for Arbitrary Electrode Geometry with Total Accounting Space and Image Charge Interactions;** Pavel Ryumin; Eugene Nikolaev; *The Institute for Energy Problems of Chemical Phys, Moscow, Russian Federation*
- ThP 061 **New Ion Trap Designs Obtained from Mapping Stability Diagrams and Determining Secular Frequency of Ion Oscillation Using Simion®;** Joe Oliphant; Edgar Lee; Steve Lammert; *Torion Technologies, Inc, American Fork, UT*
- ThP 062 **Development of Laser Ionization Mass Nanoscope 'LIMAS';** Shingo Ebata¹; Morio Ishihara¹; Kiichiro Uchino²; Satoru Ito³; Miyuki Matsuya³; Masato Kudo³; Hisayoshi Yurimoto⁴; ¹Osaka University, Toyonaka, Osaka, Japan; ²Kyushu University, Kasuga, Fukuoka, Japan; ³JEOL Ltd., Akishima, Tokyo, Japan; ⁴Hokkaido University, Sapporo, Hokkaido, Japan
- ThP 063 **Transfer Efficiency and Timing Performance Measurements of Multipole Ion Guides and Ion Wave Guides Constructed with Planar Technologies;** Albrecht Glasmachers¹; Alexander Laue¹; Albrecht Brockhaus¹; Michel Aliman²; ¹University of Wuppertal, Wuppertal, Germany; ²Carl Zeiss NTS GmbH, Oberkochen, Germany
- ThP 064 **IonCCD™ for Non-Scanning Sector-Field Instrument: from keV Ion to Image Charge Detection -- Artifacts, Performance and Potential keV Impact Damage;** Omar Hadjar¹; Thomas Schlathoelter²; Stephen Davila³; Gottfried Kibelka¹; Scott Kassin¹; Chad Cameron¹; Ken Kuhn¹; Guido F. Verbeck³; ¹ITT | OI Analytical, Pelham, AL; ²KVI - Atomic and Molecular Physics, Groningen, The Netherlands; ³University of North Texas, Denton, TX
- ThP 065 **An Axial Time-of-Flight Mass Spectrometer for Upper Atmospheric Measurements;** Addison Everett^{1, 2}; Wayne Sanderson²; Dan Allen^{1, 2}; Jim Dyer²; Mike Watson²; Erik Syrtstad²; ¹Utah State University, Logan, UT; ²Space Dynamics Laboratory, North Logan, UT
- ThP 066 **Development of a Multi-Turn Time-of-Flight Mass Spectrometer with an Atmospheric Ionization;** Masanobu Nakasono¹; Hiroki Andoh¹; Hirofumi Nagao¹; Shinichi Miki²; Michisato Toyoda¹; ¹Osaka university, Toyonaka, Japan; ²MSI. Tokyo, Chofu, Japan
- ThP 067 **Development of Multi-turn Mass Spectrometry using Non-Destructive Ion Detector;** Shingo Ebata; Daisuke Nakashima; Kousuke Katsuki; Hirofumi Nagao; Michisato Toyoda; *Morio Ishihara; Osaka University, Toyonaka, Osaka, Japan*
- ThP 068 **Application of a Multi-Turn Time-of-Flight Mass Spectrometer with a Vacuum Ultraviolet**

- Photo Ionization Source with High Light Intensity;** Hirofumi Nagao¹; Shuichi Shimma¹; Shinichi Miki²; Shigeki Matsuura³; Michisato Toyoda¹; ¹Osaka university, Toyonaka, JAPAN; ²MSI.Tokyo, Chofu, Japan; ³hamamatsu Photonics K.K., Hamamatsu, Japan
- ThP 069 **Use of Center of Mass Energy to Normalize Instrumental Variability in CID Survival Yield Experiments;** Clive Baveghems; Dennis Hill; David Grant; *University of Connecticut, Storrs, CT*

INSTRUMENTATION: NEW DEVELOPMENTS IN MASS ANALYZERS; 070 - 087

- ThP 070 **A New Preamplifier Design for Fourier-Transform Ion Cyclotron Resonance Mass Spectrometry;** Tzu-Yung Lin; Roger J. Green; Peter B. O'Connor; *University of Warwick, Coventry, UK*
- ThP 071 **A Small Transportable FTICR For Security Applications;** Joel Lemaire¹; Clotilde Le Vot¹; Moussa Bouaziz²; Hélène Mestdagh¹; Pierre Boissel²; Gérard Maucclair²; Michel Héninger²; ¹LCP CNRS - Université Paris Sud 11, Orsay, France; ²AlyXan, Orsay, France
- ThP 072 **Design of a Delayed Ion Injection Device to Improve the Detection Mass Range and the Sensitivity of FT-ICR MS;** Myoung Choul Choi; Kyu Hwan Park; Hyun Sik Kim; *Korea Basic Science Institute, Ochang-Myun, SOUTH KOREA*
- ThP 073 **Comparison of Rectilinear Ion Traps and Ion Trap Arrays;** Paul Hendricks¹; Jeff Maas²; Frank Boudreau³; Fatkhulla Tadjimukhamedov¹; William Chappell²; Robert J. Noll¹; Zheng Ouyang⁴; R. Graham Cooks¹; ¹Dept. of Chemistry, Purdue University, West Lafayette, IN; ²Dept. of Electrical Engineering, Purdue University, West Lafayette, IN; ³Purdue University, West Lafayette, IN; ⁴Dept. of Biomedical Engineering, West Lafayette, IN
- ThP 074 **Evaluation of Pulse Counting for the Mars Organic Mass Analyzer (MOMA) Ion Trap Detection Scheme;** Friso H.W. Van Amerom¹; Tim Short¹; William Brinckerhoff²; Paul Mahaffy²; Igor Kleyner²; Robert J. Cotter³; Veronica Pinnick³; Lars Hoffman⁵; Ryan M. Danell⁴; Eric I. Lyness⁶; ¹SRI International, St Petersburg, FL; ²NASA GSFC, Greenbelt, MD; ³Middle Atlantic MS Laboratory, Baltimore, MD; ⁴Danell Consulting, Greenville, NC; ⁵SGT, Greenbelt, MD; ⁶Adnet Systems Inc., Rockville, MD
- ThP 075 **Development of a Portable Mass Spectrometer for Operation at 1 Torr;** Feng Jin¹; Guido F. Verbeck²; Glen P. Jackson¹; ¹Ohio University, Athens, OH; ²University of North Texas, Denton, TX
- ThP 076 **Ejection Thresholds in Autoresonant Ion Trap Mass Spectrometers (ART MS);** Gerardo A. Brucker; G. Jeffery Rathbone; *Brooks Automation, Longmont, CO*
- ThP 077 **Performance of Orbitrap Mass Analyzer at Various Space Charge and Non-Ideal Field Conditions;** Andriy Kharchenko¹; Gleb Vladimirov²; Ron M.A. Heeren¹; Eugene Nikolaev²; ¹FOM Institute for Atomic and Molecular Physics, Amsterdam, Netherlands; ²The Institute for Energy Problems of Chemical Phys, Moscow, Russian Federation
- ThP 078 **Metrolological Characterization of a Sensitive Secondary Ion Mass Spectrometer for Electron Microscopes to Combine**

Optical/Structural and Analytical Imaging;

Alexander Laue¹; Albrecht Glasmachers¹; Albrecht Brockhaus¹; Michel Aliman²; Hubert Mantz²; ¹University of Wuppertal, Wuppertal, Germany; ²Carl Zeiss NTS GmbH, Oberkochen, Germany

ThP 079 **Charge Detection Mass Spectrometry: Pushing the Boundaries of Measuring Ultra High Mass and Heterogeneous Samples;**

John Smith^{1, 2}; Elizabeth Siegel^{1, 2}; Martin Jarrold^{1, 2}; ¹Bloomington; ²Indiana University, Bloomington, IN

ThP 080 **Dual Wire Linear Ion Trap for Analyzing Large Populations of Ions;**

Masuyuki Sugiyama; Hideki Hasegawa; Yuichiro Hashimoto; Hitachi, Tokyo, Japan

ThP 081 **Space-charge Effects in RF Ion Storage Devices;**

Dmitry Grinfeld¹; Igor Kopaev²; Alexander Makarov¹; Mikhail Monastyrsky²; ¹Thermo Fisher Scientific, Bremen, Germany; ²General Physics Institute, Moscow, Russian Federation

ThP 082 **Development of Fast Scanning Technologies for a Triple Quadrupole Mass Spectrometer;**

Dausuke Okumura; Shiro Mizutani; Hiroto Itoi; Shimadzu Corporation, Kyoto, Japan

ThP 083 **Lenses or No Lenses? A Study of Ion Transfer Efficiency at Interfaces in a Lens-less Triple Quadrupole MS;**

Felician Muntean; Roy Moeller; Bruker Daltonics, Walnut Creek, CA

ThP 084 **Development of Pumping System and Analysis of Hydrocarbons using Miniature Quadrupole Array Mass Spectrometer;**

Kohei Sasai^{1, 2}; Hideyuki Iwata²; Said Boumsellek³; Michisato Toyoda¹; ¹Osaka University, Osaka, Japan; ²Horiba STEC, Kyoto, Japan; ³Implant Sciences Corporation, San Diego, United States

ThP 085 **Improved Isolation and Scan Performance for Rapid Tandem MS Experiments in a Spherical Ion Trap;**

Desmond Kaplan¹; Andreas Brekenfeld²; Christoph Gebhardt²; Ralf Hartmer²; Marcus Nagel²; ¹Bruker Daltonics, inc., Billerica, MA; ²Bruker Daltonik, Bremen, Germany

ThP 086 **Ion Trajectory Calculations of Ions Entrained in Neutral Gas Flow in the Quadrupole Field, Utilizing Superimposed Flow Fields and Electric Fields;**

Serguei Savtchenko¹; Evgeny Makeev¹; Jean-Francois Alary²; Sha Joshua Ye¹; ¹IONICS Mass Spec Group, Inc., Bolton, ON; ²Isobarex Corp., Bolton, ON

ThP 087 **Significant Improvements in Trapping Efficiency of Externally Injected Ions Using a Cylindrical Ion Trap with Increased Buffer Gas Pressure;**

Michael Goodwin; Mitch Wells; FLIR Mass Spectrometry (Griffin), West Lafayette IN

LC-MS: SOFTWARE; 088 - 092

ThP 088 **LC Control Software for Maximum Flexibility and Rapid Automation of New Configurations;**

Brian L. Lamarche; Daniel J. Orton; David A. Clark; John D. Ryan; Derek F. Hopkins; Ronald J. Moore; Gordon A. Anderson; Richard D. Smith; PNNL, Richland, WA

ThP 089 **False Discovery Rate Evaluation of Peak Picking Algorithm in Extracted Ion Chromatograms of High-Resolution Label-Free Quantitative Phosphoproteomics LC-MS Data;**

Juan-Carlos Rodriguez-Prados; Pedro

Casado-Izquierdo; Pedro R. Cutillas; Barts Cancer Institute, London, UK

ThP 090 **Processing Methods for Signal Suppression of LC/FTMS Data;**

Xuepo Ma; Travis Hestilow; Jian Cui; Jianqiu Zhang; Univ. of Texas at San Antonio, San Antonio, TX

ThP 091 **A Universal BiopharmaLynx® Method for the Automated Determination of Protein Molecular Weights following LC/MS Analysis;**

Don Laudicina; Lance E. Steward; Dudley Williams; Allergan, Irvine, CA

ThP 092 **Concurrent Screening for Target and Unknown Analytes Using LC/MS/MS and AB SCIEX Cliquid® Software;**

Janna Anichina¹; Michael J. Y. Jarvis¹; Andre Schreiber¹; Shamim Haider¹; Warren Walsh²; ¹AB SCIEX, Concord, Canada; ²Hospital for Sick Children, Toronto, Canada

LC-MS: INSTRUMENTATION; 093 - 107

ThP 093 **Assessment of the Complementarity of LC-MS/MS Instruments on Proteome Coverage and Quantitative Accuracy Using Design of Experiments;**

Genna L. Andrews¹; Brigitte Simons²; J. Bryce Young²; Adam Hawkrig¹; David C. Muddiman¹; ¹North Carolina State University, Raleigh, NC; ²AB SCIEX, Concord, ON

ThP 094 **Enabling Faster Separations and Smaller Sample Volumes with Micro-flow Liquid Chromatography;**

Steve Hobbs; David Neyer; Eksigent, Dublin, CA

ThP 095 **Comparison of Traditional HPLC-MS/MS Sensitivity to the Sensitivity of Micro Flow Liquid Chromatography MS/MS;**

Chad Christianson¹; Shane Needham¹; Steve Hobbs²; ¹Alturas Analytics, Inc., Moscow, ID; ²Eksigent, Dublin, CA

ThP 096 **Evaluation of the Sensitivity Benefits of Micro-flow Liquid Chromatography;**

Anthony Romanelli¹; Jay Corr²; Peter Kovarik²; Paren Patel³; Thomas Covey²; ¹AB SCIEX, Framingham, MA; ²ABSCIEX, Toronto, Canada; ³Eksigent, Grafton, MA

ThP 097 **Using a Commercially Available TLC Interface for MS of Reaction Mixture Characterization in an Open Access Environment;**

Matthew Teague¹; George Perkins¹; Cris Laphorn²; ¹Pfizer Global R&D, Groton, CT; ²Pfizer, LTD, Sandwich, England

ThP 098 **Field Flow Fraction Separation and On-Line Mass Spectrometric Detection of Organelles from Heart Cell Lysates;**

Dale Chatfield; Giang Tran; Melissa Marquez; Jenny Van; Peggy Chatfield; San Diego State University, San Diego, CA

ThP 099 **The SCAP™ DBS System – Direct and Fully Automated LC-MS/MS-based Dried Blood Spot Analysis of Bosentan and Metabolites;**

Mirko Glinski¹; Norbert Ganz¹; Jasper Dingemans²; Laurent Nicolas²; Werner Döbelin³; ¹Inovalab AG, Reinach, Switzerland; ²Actelion Pharmaceuticals Ltd, Allschwil, Switzerland; ³Prolab GmbH, Reinach, Switzerland

ThP 100 **Analysis of Natural Antioxidants by Electrolyte-Free HPLC-SPE/MS;**

Hao-Lun Huang; Kuo-Lung Ku; National Chiayi University, Chiayi City, Taiwan

- ThP 101 **Integration of a Paper Electrospray Ionization Emitter with Microfluidic System;** Bei Nie; *University of Notre Dame, South Bend, IN*
- ThP 102 **Application of a Microflow LC/MS/MS Source for Quantitative Bioanalysis of Small Molecules Using Reduced Sample Volumes in Discovery DMPK;** Heather Skor; Ravi Rahavendran; *Pfizer Worldwide R & D, San Diego, CA*
- ThP 103 **High performance Liquid Chromatography Combined with Rotating Electrospray Ionization Mass Spectrometry (HPLC/RESI/MS) for Very High Flow LC/MS Analysis;** Siou-Sian Jhang; Jentaie Shiea; *National Sun Yat-Sen Univ., Kaohsiung, Taiwan*
- ThP 104 **High Throughput HPLC/Single Quadrupole Analysis with a Dual Probe ESI Source;** Adam J. Patkin; Sharanya Reddy; Eugene Davidov; *PerkinElmer, Shelton, CT*
- ThP 105 **Application of APPI for Reduction of Background Signal Observed in SFC-MS with Columns Utilizing Ethyl-Pyridine and Other Basic Stationary Phases;** Jonathan Marshall; Michael Peddicord; Mark S. Bolgar; Charles Pathirana; *Bristol-Myers Squibb, New Brunswick, NJ*
- ThP 106 **Disulfide Mapping using Accurate Mass ETD and MSn Techniques;** Iman Mohtashemi; Jie Qian; *ThermoFisher, San Jose, CA*
- ThP 107 **Simplified Approach for the Development of a Bioanalytical DBS Assay using a Tandem Quadrupole with a Novel Collision Cell Design;** Joanne Mather; Paul Rainville; Rob Plumb; *waters corporation, Milford, MA*
- LC-MS: SAMPLE PREPARATION: SMALL MOLECULE, 108 - 136**
- ThP 108 **LC-MS/MS Method Development for Quantitation of Isradipine in Plasma by Supported Liquid Extraction (SLE) and Dried Blood Spot (DBS) Sampling;** Adlai E Niggebrugge; Ravi K. Podagatlapalli; Radhika Sanduja; Ardeshir Khadang; Chinna Pamidi; Roger Hayes; *Cetero Research, Houston, TX*
- ThP 109 **Internal Standard (IS) Application to Dried Blood Spots (DBS) - Evaluation of a Novel Automated Application System;** Dieter Zimmer¹; Stephan Sack¹; Beatrice Betschart¹; Christoph Fankhauser²; Matthias Loppacher²; ¹Harlan Laboratories Ltd., Itingen, Switzerland; ²CAMAG, Muttenz, Switzerland
- ThP 110 **A Pharmacokinetic Evaluation of Acetaminophen in Dog Plasma and Dried Blood Spots Using Automated Blood Collection;** Vance Cooper¹; L. David Hopper²; Tyler DeGraw³; Katherine Fordyce¹; Nicholas Suttles²; K. Bradley Gien²; Z. Deforrest¹; Lori Payne¹; ¹BASi, McMinnville, OR; ²BASi-Evansville, Evansville, IN; ³BASi-WL, West Lafayette, IN
- ThP 111 **Non Card Dried Biofluid Spot Analysis of Pharmaceuticals using High resolution LC with Fast Tandem Mass Spectrometric Detection;** Michel Wagner¹; Neil Loftus²; Alan Barnes²; Emmanuel Varesio¹; Gérard Hopfgartner¹; ¹University of Geneva, Geneva, Switzerland; ²Shimadzu, Manchester, UK
- ThP 112 **Comprehensive Study Examining Interfering Compounds from Various Dried Blood Spot Cards and Extraction Solvents with ESI Positive Tandem Quadrupole MS;** Jennifer Simeone¹; Chester L Bowen²; Joanne Mather¹; Robert Plumb³; Paul Rainville¹; ¹Waters Corporation, Milford, MA; ²GlaxoSmithKline, King Of Prussia, PA; ³Imperial College, London, UK
- ThP 113 **Comparison of Dry Blood Spot (DBS) Sampling from Whole Blood with and without anticoagulant;** Hasantha Jayaratna; Rachel Sun; Philip Downing; *BASi, West Lafayette, IN*
- ThP 114 **Dried Blood Spotting Sample Volume Variability;** William Hudson; Paul Boguszewski; Yung-Lin Chen; *Agilent Technologies, Lake Forest, CA*
- ThP 115 **Quantification of Entecavir in Dried Blood Spots (DBS) and Human Plasma; Comparison of DBS and Plasma Method by LC-MS/MS;** Xiaonan Tang; Jing Ke; Harry Zhao; Zhongping (John) Lin; *Frontage Laboratories, Malvern, PA*
- ThP 116 **Dried Blood Spot Analysis - Consistent Spot Homogeneity with Variable Spot Punch Locations;** Ritu Arora; William Hudson; Paul Boguszewski; *Agilent Technologies, Lake Forest, CA*
- ThP 117 **A New Sample Preparation Method for LC/MS/MS Analysis of Isotretinoin (13-cis retinoic acid) and Metabolites: Selective Solid-Phase Extraction;** Jenny Dai; Kathryn Gilliland; Ellen Wolpert; Melanie Dispenza; Diane Thiboutot; *Penn State University, Hershey, PA*
- ThP 118 **Multi-Walled Carbon Nanotubes as Extraction Sorbents Combined with Liquid Chromatography-Tandem Mass Spectrometry for Determination of Diuretics in Urine;** Tse-Tsung Ho; Cheng-Hsin Yeh; Maw-Rong Lee; *National Chung-Hsing University, Taichung, Taiwan*
- ThP 119 **Fit for Purpose Sample Preparation in Bioanalysis: Tools to Reduce Sources of Matrix Effects in LC/MS/MS Assays;** John Martin; Jessalynn Wheaton; Erin Chambers; Diane Diehl; *Waters Corporation, Milford, MA*
- ThP 120 **Relieve LC-MS Stress in Bioanalysis - Comparison between SPE, Protein Precipitation, Solid-Supported Liquid-Liquid Extraction and Multi-Function Impurity Adsorption SPE (MAS);** Qihui Ni; Wan Wang; Jerry Wang; *Bonna-Agela Technologies, Inc., Wilmington, DE*
- ThP 121 **Effective Strategies for Phospholipid Removal using Polymer-based Solid Phase Extraction (SPE) with LC-MS/MS Analysis;** Lee Williams; Helen Lodder; Rhys Jones; Adam Senior; Richard Calverley; Gavin Jones; Claire Desbrow; *Biotage GB Limited, Cardiff, UK*
- ThP 122 **Effective Strategies for Phospholipid Removal using Supported Liquid Extraction (SLE) with LC-MS/MS Analysis;** Rhys Jones; Lee Williams; Helen Lodder; Adam Senior; Steve Jordan; Claire Desbrow; Richard Calverley; Gary Douthwaite; Gavin Jones; *Biotage GB Limited, Cardiff, UK*
- ThP 123 **Examining the Roles of Species, pH, and Ionization in Contributing to Divergence in a Series of Structurally Similar Small Molecules;** Kristopher King; Kojo Abdul-Hadi; Rosanna Nguyen-Hak; *Tandem Labs, Woburn, MA*
- ThP 124 **Multi-screening Analysis of Veterinary Drugs in Milk Powders by Turbulent Flow Chromatography Tandem Mass**

- ThP 125 **Spectrometry**; Yves-Alexis Hammel; Nestle Reseach center, Lausanne 26, Switzerland
- ThP 126 **Solid Phase MicroExtraction-Liquid Chromatography-Mass Spectrometry (SPME-LC-MS) – New Potential for Drug Monitoring and Metabolomics**; Barbara Bojko¹; Marcin Wasowicz²; Janusz Pawliszyn¹; ¹University of Waterloo, Waterloo, Canada; ²Toronto General Hospital, Toronto, Canada
- ThP 127 **Biocompatible and Reusable Octadecyl-Polyacrylonitrile Coating for High Throughput Automated 96-Thin-Film Solid Phase Microextraction System Coupled with LC-MS/MS**; Fatemeh Mirnaghi¹; Janusz Pawliszyn¹; Yong Chen²; Leonard Sidisky²; Dietmar Hein³; ¹University of Waterloo, Waterloo, Canada; ²SUPELCO, Bellefonte, USA; ³Professional Analytical System Technology, Magdala, Germany
- ThP 128 **Quantitative LC-MS/MS Analysis of Plasma Metanephries using C-18 Solid Phase Extraction Assisted with Ion-Pairing Reagents**; Xiang He; Marta Kozak; ThermoFisher Scientific, San Jose, CA
- ThP 129 **LCMS Detection of a Small Anion, Thiocyanate, by Ion-Pair Chromatography**; Roger Demers; Tandem Labs, West Trenton, NJ
- ThP 130 **A Novel Derivatization Approach for the Sensitive Detection of Brassinosteroids using UPLC-QQQ MS**; Feifeng Huo; Yu Bai; Huwei Liu; College of Chemistry, Peking University, Beijing, CHINA
- ThP 131 **Pre-equilibrium in vivo Solid Phase Microextraction for Monitoring Drug Concentration Changes in Rat Brain Tissue**; Erasmus Cudjoe¹; Xu Zhang¹; Ehsan Hoque²; Ines de Lannoy³; Victor Saldivia³; Sun Huadong³; Janusz Pawliszyn¹; ¹University of Waterloo, Kitchener, Canada; ²Trent University, Peterborough, Canada; ³NoAb BioDiscoveries, Mississauga, Canada
- ThP 132 **Solid Phase Microextraction: The Potential for in vivo Quantification of Endogenous Small Polar Molecules in Biological Matrices**; Erasmus Cudjoe¹; Clemant Hamani²; Ehsanul Hoque³; Ines de Lannoy⁴; Victor Saldivia⁴; Huadong Sun⁴; Janusz Pawliszyn¹; ¹University of Waterloo, Kitchener, Canada; ²Centre for Addiction and Mental Health, Toronto, Canada; ³Trent University, Peterborough, Canada; ⁴NoAb BioDiscoveries, Mississauga, Canada
- ThP 133 **Analysis of Pain Management Drugs using Automated Disposable Pipette Extraction and LC/MS/MS**; Fred Foster¹; William Brewer²; Ed Pfannkoch¹; Jack Stuff¹; ¹Gerstel, Inc., Linthicum, MD; ²DPX Labs, LLC, Columbia, SC
- ThP 134 **Validation of an Automated Liquid Handling System for the Analysis of Immunosuppressant Drugs and Vitamin D Metabolites by LC/MS/MS**; Sarah Fair¹; Dayana Argoti²; Joseph L. Herman³; ¹Thermo Fisher Scientific, Franklin, MA; ²ThermoFisher Scientific, Franklin, MA; ³West Chester University, West Chester, PA
- ThP 135 **High Throughput UHPLC/MS Analysis of Serotonin Re-Uptake Inhibitors from Protein Precipitated Plasma Samples**; Daniel Tran; Agilent Technologies, Lake Forest, Ca, CA
- ThP 136 **Detection of Amphetamines in Unprocessed Biological Fluids using Restricted Access Media Columns and UHPLC-MS/MS**; Jorge Smith; Peter C. Combe; Fernando Garcia; Ben Figard; Shimadzu Scientific Inst., Houston, TX
- ThP 137 **Internal Standard Addition: An Evaluation of Different Methodologies and the Impact on Quantitation and IS Precision**; Stacey L. Zeman; Brian Hoffman; Daniel Mulvana; Advion BioServices, Ithaca, NY
- MALDI: SAMPLE PREPARATION; 137 - 162**
- ThP 138 **Efficient Picomolar Gel Electroelution for Protein Mass Spectrometry**; Debnath Pal; Payel Ghatak; Pratip Saha; Indian Institute of Science, Bangalore, India
- ThP 139 **Vacuum Matrix Sublimation with Vapor Induced Crystallization for Label-Free Imaging of Protein Arrays**; Jaekuk Kim; Michael Roth; Daniel Smith; Steven Patrie; UT Southwestern Medical Center, Dallas, TX
- ThP 140 **Gas Phase Reactions for Optimized 9.4 T Fourier Transform Mass Spectra of [6,6]-Phenyl C61-Butyric Acid Methyl Ester**; Evgenia Akhmetova; Santosh Narasimhachary; Ashok Saxena; Eric Berget; Charles L. Wilkins; University of Arkansas, Fayetteville, AR
- ThP 141 **A Dopamin Coated Plate for the Analysis of Small Molecules by MALDI**; Hyoyoung Mun^{1,2}; Duhee Park^{1,2}; Jongsik Lee^{1,2}; Yangsun Kim^{1,2}; ¹Hudson surface Technology, Inc., Fort Lee, NJ; ²Applied surface technology, Inc., Suwon-Si, South Korea
- ThP 142 **New MALDI matrices Inducing Radical Mediated In-Source Decay of Peptides and Proteins**; Nicolas Smargiasso; Kevin Demeure; Edwin De Pauw; University of Liege, Liege, Belgium
- ThP 143 **Observation of Non-covalent Complexes of Fatty Acids and Iron using Proton Sponge Matrix in MAILD-TOFMS**; Viswanatham Katta; Min Zhu; Edward Hoff; Mary Zhu; Genentech, S. San Francisco, CA
- ThP 144 **Study of Various Dyes as Matrices of Visible-Wavelength Laser Desorption/Ionization MS**; Zhen Sun; Yang Xu; Eric Findsen; Dragan Isailovic; The University of Toledo, Toledo, OH
- ThP 145 **A Dual Mass Spectrometry Platform Based on Aptamer Conjugated Graphene Oxide**; Basri Gulbakan; Emir Yasun; M. Ibrahim Shukoor; David H. Powell; Weihong Tan; University of Florida, Gainesville, FL
- ThP 146 **Analysis of Glycans Enriched by Charcoal using Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry**; Sunyoung Lee; Jangmi Hong; Jeongkwon Kim; Chungnam National University, Daejeon, South Korea
- ThP 147 **Structural and Quantitative Characterization of Surface Ligands on Magnetic Nanoparticles Using Laser Desorption/Ionization Mass Spectrometry (LDI-MS)**; Bo Yan; Youngdo Jeong; Zheng-Jiang Zhu; Chae-kyu Kim; Vincent Rotello; Richard Vachet; University of Massachusetts Amherst, Amherst, MA
- ThP 148 **Measuring the Monolayer Stability of Nanoparticles in Cells Using Laser Desorption/Ionization Mass Spectrometry**; Zheng-Jiang Zhu; Rui Tang; Yi-Cheun Yeh;

- Vincent M. Rotello; Richard Vachet; *University of Massachusetts, Amherst, MA*
- ThP 148 **Collection of Neuropeptides Released from Individual Neurons with Custom Particle-Embedded Capillaries and Detection with Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry;** Yi Fan; Stanislav S. Rubakhin; Jonathan V. Sweedler; *University of Illinois at Urbana-Champaign, Urbana, IL*
- ThP 149 **Peptide Enrichment for ToF/ToF Analysis by Use of Chromatographic Retentate MALDI Arrays for Capture from Human Brain Lysate;** Steve Roth¹; Matthew Hammond¹; Amanda Bulman¹; Mariana Rusa¹; Rishikesh Mankidy²; Fiona Plows¹; ¹*Bio-Rad Laboratories, Inc., Hercules, CA*; ²*Phenomenome Discoveries, Saskatoon, Canada*
- ThP 150 **On the Use of THAP as a MALDI Matrix for Glycan Analysis;** Steven L. Cohen^{1,2}; Julio Cesar Padovan¹; Steven H. Seeholzer²; ¹*The Rockefeller University, NY, NY*; ²*Children's Hospital of Philadelphia Research Insti, Philadelphia, PA*
- ThP 151 **Using Covalent Labeling to Understand the Selective Extraction and Enhanced Detection of Peptides by Polymeric Reverse Micelles and MALDI-TOF-MS;** Gladys Murage; Ramalingam Thirumoorthi; Sankaran Thayumanavan; Richard Vachet; *University of Massachusetts, Amherst, MA*
- ThP 152 **A Novel Strategy for Single Cell Analysis: MS-Based Peptidomics of Individual Immunostained Neurons;** Susanne Neupert^{1,2}; Stanislav Rubakhin^{1,2}; Jonathan Sweedler³; ¹*Beckman Institute, UIUC, Urbana, IL*; ²*Beckman Institute, UIUC, Urbana, IL*; ³*University of Illinois, Urbana, IL*
- ThP 153 **The Use of NHS-SS-Biotin Cross-Linker for the Increase of 5-Lipoxygenase Total Sequence Coverage;** Stavroula Markoutsas; Demitrios Papasotiriou; Bernd Sorg; Rolf Marschalek; Michael Karas; *Goethe University, Frankfurt, Germany*
- ThP 154 **Applications of a Tertiary Matrix for the Analysis of Various Samples using Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry (MALDI-TOF MS);** Jangmi Hong; Sunyoung Lee; Jeongkwon Kim; *Chungnam National University, Daejeon, South Korea*
- ThP 155 **Using Ionic Liquids as Matrix in High Mass MALDI-MS;** Simon Weidmann; Stefanie Maedler; Renato Zenobi; *ETH Zurich, Zurich, Switzerland*
- ThP 156 **Enhanced Shelf-life of Robust Monodisperse Dendrimers for Use as Mass Spectrometry Calibrants;** Scott M. Grayson; *Tulane University, New Orleans, LA*
- ThP 157 **Long Term Storage of Protein/Peptide Samples on Polymer Based Nano-Coated MALDI MS Targets for Archiving of Biological Relevant Materials;** Stefan Bugovsky¹; Wolfgang Winkler¹; Werner Balika²; Manfred Koranda²; Guenter Allmaier¹; ¹*Vienna University of Technology, Vienna, Austria*; ²*Sony DADC Austria AG, Anif, Austria*
- ThP 158 **Solvent Optimisation for the MALDI-MS Analysis of Cell Envelope Components of *Mycobacterium*;** Claire Carter; Josephine Bunch; *University of Birmingham, Birmingham, UK*
- ThP 159 **A Versatile MALDI Target Plate Based on Polymer-Filled Reticulated Vitreous Carbon Foam;** Stephen J. Hattan; Jie Du; Kenneth Parker; *VIC Instruments Corporation, Sudbury, MA*
- ThP 160 **Measurement of Sample Thickness and Sample Profile of Electrospray Deposited Samples by MALDI TOFMS and Spectral Reflectance;** Renata Szyszk¹; James F. Elman²; Kevin G. Owens¹; ¹*Drexel University, Philadelphia, PA*; ²*Filmetrics, Inc., Fairport, NY*
- ThP 161 **Probing the Effect of Wavelength on Matrix Compounds in the UV-MALDI-TOFMS Experiment;** Jonathan Haulenbeek; Francisco Guevara; Kevin G. Owens; *Drexel University, Philadelphia, PA*
- ThP 162 **How Do Matrix Alternatives Compare with DHB in Distinguishing between the Metabolic Footprints from 5 Yeast Mutants using MALDI-MS?** Lindsay Lai-Rowcroft; Michael Anderson; Roy Goodacre; *University of Manchester, Manchester, UK*
- SMALL MOLECULE: QUANTITATIVE ANALYSIS; 163 - 185**
- ThP 163 **Optimization of a Robust LC/MS/MS Assay for the Quantitation of an Unstable Compound to Support Clinical Studies;** Christopher Binns; Kimberly Norwood; Kathy Champion; Wenyi Hua; Chris Nattrass; Ted Green; Daniel Mulvana; John R. Perkins; *Advion BioSciences, Ithaca, NY*
- ThP 164 **Isotope Ratio Accerator Mass Spectrometry Method Validation: Single Point Calibration and 'Zero' Drug LLOQs;** Stephen Dueker; Jason Giacomo; John Vogel; Peter Lohstroh; *Vitalea Science, Davis, CA*
- ThP 165 **Comparison of Derivatized and Underivatized 1,25-Dihydroxyvitamin D2 and D3 Quantitative Analysis in Blood by LC-MS/MS Utilizing Ion Funnel Technology;** Andre Szczesniewski; Kevin McCann; *Agilent Technologies, Santa Clara, CA*
- ThP 166 **A Rapid Quantitative Analysis of Five Immunosuppressant Drugs in Blood by LC-MS/MS for Clinical Research;** Kevin McCann; *Agilent Technologies, Santa Clara, CA*
- ThP 167 **Changes in Neonatal Serum and Breast Milk Levels of Lysophosphatidylcholines;** Atsuko Takeuchi; Chika Takashima; *Kobe Pharmaceutical University, Kobe, Japan*
- ThP 168 **Quantitative Determination of Ginsenoside Re and Its Metabolites in Rat Plasma by LC-MS/MS;** Unyong Kim^{1,2}; Jeong-Rok Youm²; Sang Beom Han²; Oh-Seung Kwon¹; Hye Hyun Yoo³; ¹*Doping Control Center, KIST, Seoul, South Korea*; ²*College of pharmacy, Chung-Ang university, Seoul, South Korea*; ³*College of pharmacy, Hanyang university, Ansan, Gyeonggido, South Korea*
- ThP 169 **Simple, Rapid and Simultaneous Determination of Acrylamide and its Metabolites in Human Urine by HILIC-ESI-MS/MS;** Jung Won Min; Joon Hyuk Suh; Han Young Eom; Min Kyung Kim; Junghyun Kim; Hyecheon Lee; Jeong-Rok Youm; Sang Beom Han; *College of Pharmacy, Chung-Ang University, Seoul, South Korea*

- ThP 170 **Simultaneous Determination of Candesartan, Valsartan, Losartan, and Irbesartan in Human Plasma by LC-MS/MS**; Unyong Kim; Hyejeon Lee; Han Young Eom; Junghyun Kim; Jeong-Rok Youm; Sang Beom Han; *College of pharmacy, Chung-Ang university, Seoul, South Korea*
- ThP 171 **Improving Bioanalytical Selectivity in Differential Mobility Spectrometry - Mass Spectrometry using Chemical Effects**; J.C. Yves Leblanc¹; Doina Caraiman²; Brad Schneider¹; J. Larry Campbell¹; Hesham Ghobarah¹; ¹AB SCIEX, Concord, ON, Canada; ²AB/ SCIEX, Concord, ON
- ThP 172 **Quantitation of Small Pharmaceutical Compound by LDTD/MS/MS, Atmospheric Pressure Chemical Ionization, As Compared to LC/MS/MS of Clinical Study Samples**; Azza Wagdy¹; Serge Auger²; Grace E. Kim¹; Joseph C. Kim¹; Patrice Tremblay²; ¹Abbott Laboratories, Abbott Park, IL; ²Phytronix Technologies Inc., Québec, Canada
- ThP 173 **Simultaneous Determination of Acetaminophen, Tramadol and O-desmethyiltramadol in Human Plasma by LC-MS/MS**; Kyung Hyeon Lee; Yeon Jin Shin; Kyung Hee Cho; Sookie La; Hee Joo Lee; *BioCore, Seoul, Korea*
- ThP 174 **A Rapid and Sensitive LC/MS/MS Method for the Quantification of JCC 76 in Rat Plasma**; Xiaohan Cai; Bo Zhong; Bin Su; Baochuan Guo; *Cleveland State University, Cleveland, OH*
- ThP 175 **Simultaneous Measurement of Fifteen Anti-Tuberculosis Compounds Using LC-MS-MS**; Yang Song^{1,2}; Kuanwei Peng¹; Nan Zhang¹; Richard B. Van Breemen²; Scott G. Franzblau¹; ¹Institute for Tuberculosis Research, Chicago, IL; ²University of Illinois at Chicago, Chicago, IL
- ThP 176 **LC/MS/MS Method for the Quantitative Determination of Ultralow Levels of Ester Prodrug and Acid Metabolite in Human Blood and Plasma**; Jinlin Shen²; Jennifer Keller²; Zong-Ping Zhang²; Andrew Acheampong¹; John Ling¹; Gabriella Szekely-Klepser¹; ¹Allergan Pharmaceuticals, Irvine, CA; ²PPD, Middleton, Wisconsin
- ThP 177 **Quantification of Tiotropium in Human Plasma with a 1 pg/mL LLOQ using HPLC and LC/MS/MS**; Yue Zhao; Stephanie Harrison; Troy Voelker; Min Meng; *Tandem Labs, Salt Lake City, UT*
- ThP 178 **LCMS Characterization of Anthroquinones in a mixture. Quantification and Comparison of Detection Limits by Mass Spectrometry and UV-Vis**; Christina Jasieczek Mastromatteo¹; Ben Englehart²; Eric Anderson¹; Perry Matheny¹; ¹Lubrizol Advanced Materials, Brecksville, OH; ²Promerus LLC, Brecksville, OH
- ThP 179 **Determination of a New Tricyclic Pyrazole Derivative in Rat Plasma and Brain by Liquid Chromatography - Tandem Mass Spectrometry**; Giuseppe Peddio^{1,2}; Matteo Falzoi^{2,3}; Barbara Pittau²; Giovanni Loriga³; Luca Pani³; Paolo Lazzari^{2,4}; ¹Consorzio Elpro, Ed.5, Loc. Piscinamanna, 09010 Pula (CA), Italy; ²PharmaNess Scarl, Ed.5, Loc. Piscinamanna, 09010 Pula (CA), Italy; ³CNR, Istituto di Farmacologia Traslazionale, 09010 Pula (CA), Italy; ⁴Dip. to Scienze del Farmaco, Università Sassari, 07100 Sassari (SS), Italy
- ThP 180 **'On-the-Fly' Gas-Phase Derivatization via Ion/Molecule Reactions: A Novel Strategy for Rapid Analysis of Epoxide Impurities in Active Pharmaceutical Ingredients**; Lianming Wu; David Q. Liu; Frederick G. Vogt; Alireza S. Kord; *GlaxoSmithKline, King of Prussia, PA*
- ThP 181 **Liquid Chromatography-Mass Spectrometry (LC-MS) Assay for Analysis of Heptanone-Ethene-2'-Deoxyguanosine as Biomarker of Oxidative Stress in Human Urine**; Yu Shi; Clementina Mesaros; Jasbir S. Arora; Sumit Shah; Ian A. Blair; *University of Pennsylvania, Philadelphia, PA*
- ThP 182 **Development of an LC-MS/MS Method to Quantitate Age Related Differences in Dexamethasone Metabolism in Rhesus Macaques**; Sarah Pruett¹; M. Kyle Cannon¹; Vasiliki Michopoulos¹; Shannon Bounar¹; Mar Sanchez^{1,2}; Mark E. Wilson¹; ¹Yerkes National Primate Res. Ctr., Emory University, Atlanta, GA; ²Dept. Psychiatry and Behavioral Sci., Emory Univ., Atlanta, GA
- ThP 183 **Determination of Tacrolimus in Rat Whole Blood by Dried Blood Spot Analysis using LC-MS/MS**; Gene Ray; Moo-Young Kim; Yansheng Liu; Dari Dadgar; *KCAS, LLC, Shawnee, KS*
- ThP 184 **Evaluation of Response Saturation in LC/MS/MS Quantitative Analysis**; Zhenmin Liang¹; Hang Zeng¹; Sreepriya Velanki¹; Bernd Steinhuber²; Stefan Masur²; David Moore¹; ¹Hoffmann-La Roche, Inc., Nutley, NJ; ²Hoffmann-La Roche, Basel, Switzerland
- ThP 185 **CNX-774, an Irreversible, Selective and Orally Bioavailable Inhibitor of Bruton Tyrosine Kinase: *in vitro* ADME, Selectivity, and Pharmacokinetic Properties**; Prasoon Chaturvedi; Matthew Labenski; Erica Evans; Hormoz Mazdeyasni; Michael Sheets; Russell Karp; Richland tester; Deqiang Niu; Mariana Nacht; Russell Petter; Juswinder Singh; William Westlin; *Avila Therapeutics Inc, Waltham, MA*

DRUG METABOLISM: HIGH THROUGHPUT ANALYSIS; 186 - 202

- ThP 186 **Evaluation of High Resolution Accurate Mass Spectrometer for Bioanalytical Support of *in-vitro* ADME Screening Assays**; Jennifer Maloney; Jun Zhang; Dieter Drexler; Marianne B Vath; Katarzyna Kieltyka; Harold Weller; Wilson Shou; *Bristol-Myers Squibb Company, Wallingford, CT*
- ThP 187 **High Throughput Metabolite Identification and Automated Metabolic Soft Spot Analysis by High Resolution Accurate Mass Spectrometry**; Ahmed Aman²; Barry Press²; Suma Ramagiri¹; Alina Dindyal-Popescu¹; Shaokun Pang¹; Eva Duchoslav¹; Rima Al-awar²; ¹AB SCIEX, Concord, Canada; ²Ontario Institute for Cancer Research, MaRS Centre, Toronto, Canada
- ThP 188 **Selective and Sensitive Recording of MS/MS Spectra of Unknown Drug Metabolites in Complex Matrix Using Mass Defect-Dependent Acquisition**; Kerong Zhang¹; Jie Xing²; Yongming Xie¹; Mingshe Zhu³; ¹AB Sciex, Shanghai, China; ²Shandong University, Jinan, China; ³Bristol-Myers Squibb, Princeton, NJ

- ThP 189 **High Throughput Laser Diode Thermal Desorption Mass Spectrometry for the Determination of Time Dependent Cytochrome P450 Inhibition in Human Liver Microsomes**; Caroline Gauvin¹; Renu S. Dhanikula¹; Huy Khang Vu¹; Rosemarie Panetta¹; Gregory Blachon²; Patrice Tremblay²; ¹AstraZeneca R&D Montreal, Montreal, Canada; ²Phyttronix Technologies Inc., Québec, Canada
- ThP 190 **Affinity Mesh Screen Materials for Rapid Drug Discovery Using Transmission Mode Desorption Electrospray Ionization Mass Spectrometry**; Samuel Yang¹; Sumit Bhawal¹; Rajendrasing Deshmukh¹; Aruna Wijeratne²; Brian Edwards¹; Frank Foss¹; Richard Timmons¹; Kevin Schug¹; ¹University of Texas Arlington, Arlington, TX; ²The Department of Cancer and Cell Biology, Cincinnati, OH
- ThP 191 **High Throughput LC/MS Methods Development for *in vitro* ADME Screening**; Veronica Zelesky; Richard Schneider; John Janiszewski; Hui Zhang; Pfizer Global R&D, Groton, CT
- ThP 192 **Ultrafast SPE Integrated with TOF-MS Increases the Throughput of Metabolic Stability Assays and Enables Analysis of Metabolites**; Nikunj Parikh¹; Michelle Romm¹; Yuqin Dai²; Vaughn Miller¹; William A. Lamarr¹; Keith Waddell²; Can "Jon" Ozbal¹; ¹BIOCIUS Life Sciences, Inc., Wakefield, MA; ²Agilent Technologies, Santa Clara, CA
- ThP 193 **A Suite of High Throughput *in vitro* ADME Assays Based on In-Line Solid Phase Extraction and Mass Spectrometry**; Cheryl A Black¹; Jeffrey Quinn²; Brett Leclaire¹; Eric Sands¹; Tonika Bohnert¹; Guangqing Xiao¹; Ellen Rohde¹; Liang-Shang Gan¹; ¹Biogen Idec, Cambridge, MA; ²Stanford University, Palo Alto, CA
- ThP 194 **A Software Enabled Relative Quan/Qual Workflow: Acquisition and Automatic Processing of *in vitro* Screening Data using a Benchtop HRAM MS**; Karen Salomon¹; Tim Stratton¹; Maciej Bromirski²; Yingying Huang¹; ¹Thermo Fisher Scientific, San Jose, CA; ²Thermo Fisher Scientific, Bremen, Germany
- ThP 195 **Reactive Metabolite Screening in Early ADME using Rapid Accurate Mass Technology**; James A. Ferguson¹; Richard Schneider²; Veronica Zelesky²; Hui Zhang²; ¹AB Sciex, Framingham, MA; ²Pfizer Global R&D, Groton, CT
- ThP 196 **Utilization of Online Dilution Techniques to Improve Quantitative and Qualitative LC/MSⁿ Analyses for Drug Discovery**; Ari Gritsas; Helene Maurice; Ralf Schmidt; Marie Roumi; AstraZeneca R&D Montréal, Ville Saint-Laurent, Canada
- ThP 197 **Characterization of Small Molecule Aggregate Components in Cystine Stones as a Screen for Candidate Stone Inhibitors**; Matthew R. Lewis¹; Amrik Sahota³; Michael D. Ward²; David S. Goldfarb²; Elaine Holmes¹; Elizabeth J Want¹; ¹Imperial College London, London, UK; ²New York University, New York, NY; ³Rutgers, Camden, NJ
- ThP 198 **Application of a Novel Bench-top Orbitrap Mass Spectrometer with a Quadrupole Mass Filter for Metabolite Profiling in Drug Discovery**; Qian Ruan¹; Kate Comstock²; Li Ma¹; Tim J Stratton²; Yingying Huang²; Mingshe Zhu¹; ¹Bristol-Myers Squibb, Princeton, NJ; ²Thermo Fisher Scientific, San Jose, CA
- ThP 199 **A Comprehensive Approach to the Profiling of the Cooked Meat Carcinogens PhIP, MeIQx and their Metabolites in Human Urine**; Dan Gu; Robert Turesky; Wadsworth Center, NYS Department of Health, Albany, NY
- ThP 200 **Modified Polyacrylonitrile-Polystyrene-Divinylbenzene 96-Thin-Film SPME System, Capable of Extracting Wide Polarity Range of Analytes from Biological Fluids**; Fatemeh Mirnaghi; Janusz Pawliszyn; University of Waterloo, Waterloo, Canada
- ThP 201 **Using High Sensitivity, High Throughput Rapid Serial Analytical Approaches in ADME for Routine Quantitation and Metabolite ID**; Richard Lauman¹; John Laycock²; Loren Olson¹; ¹AB SCIEX, San Jose, CA; ²Amgen, Inc, Thousand Oaks, CA
- ThP 202 **Identifying Chemical Error in Lead Optimization**; Timothy Dunne; Holly McKeith; David Vlaun; Travis Mathewson; Rosalia Gonzales; Pfizer, Groton, CT
- DRUG METABOLISM: HIGH THROUGHPUT/ROBOTICS; 203 - 218**
- ThP 203 **A Microfluidic Deposition Matrix- free Target for Coupling Liquid Separations to MALDI**; Jon Beusse; Kermit K. Murray; Louisiana State University, Baton Rouge, LA
- ThP 204 **Specificity and Throughput Challenges and Solutions in Protein Biomarker Verification/Validation**; Konstantinos Petritis¹; Mark Holl²; Deirdre Meldrum²; Matthew Rosenow¹; ¹Translational Genomics Research Institute, Phoenix, AZ; ²Arizona State University, Tempe, AZ
- ThP 205 **Determination of Ritonavir, Saquinavir and Lopinavir in Dried Blood Spots by LC/MS/MS Comparing Different Automated Extraction Approaches**; Thomas Lloyd; Ravi Orugunty; Adan Orta; Andrea Butz; Steven Hoehne; Worldwide Clinical Trials, Austin, TX
- ThP 206 **Approaching 100% LC-MS Duty Cycle with a Three-Column Nano-electrospray Interface**; Katie Southwick¹; Ben Ngo²; Helene Cardasis¹; Mike S. Lee³; Gary Valaskovic²; Nathan Yates¹; ¹Merck & Co, Rahway, NJ; ²New Objective, Inc., Woburn, MA; ³Milestone Development Services, Newtown, PA
- ThP 207 **High Throughput Low Dead Volume Nanolc-MS Methods Involving a Trap Column**; Arthur Fogiel; Katherine Heaton; Arthur Fogiel, Jr; Sau Lan Tang Staats; Phoenix S&T, Chester, PA
- ThP 208 **Direct Extraction/Analysis of Dried Blood Spots(DBS): A Fully Automatic System Including Spot Localization, Internal Standard(IS) Application and Multiple Batch Analysis**; Matthias Loppacher¹; Christoph Fankhauser¹; Klaus Schetter¹; Urs Schranz¹; Manuel Altmeyer²; Agathe Koller²; Bettina Mueller²; Silvio Walpen²; ¹CAMAG, Muttenz, Switzerland; ²Institute for Laboratory Technology, Rapperswil, Switzerland
- ThP 209 **Design of an Agile, High-Throughput Proteomics Pipeline for use in an Industrial Synthetic Biology Setting**; Peter Jackson; Tahera Iqbal; Manbir Labhan; Sara P. Gaucher; Amyris Inc, Emeryville, CA

- ThP 210 **24 hours to Purified Compound from Sample Receipt;** Mark A. Bayliss¹; Joseph Simpkins¹; Martin Fuhr²; Utz-Peter Jagusch²; Josephine Archinal²; Stefan Oberbörsh²; ¹Virscidian Inc, Raleigh, US; ²Grünenthal GmbH, Aachen, DE
- ThP 211 **Development of a 20 kpsi Enzymatic Digester for High Throughput Proteomic Analysis and Its Application to Membrane Proteomics;** Seok-Won Hyung¹; Daniel López-Ferrer¹; Daniel J. Orton¹; Erika Zink¹; Karl K. Weitz¹; Rui Zhao¹; Ronald J. Moore¹; Kim K. Hixson¹; Edmund Y. Ting²; Alexander V. Lazarev²; Richard D. Smith¹; ¹Pacific Northwest National Laboratory, Richland, WA; ²Pressure Biosciences, Inc, South Easton, MA
- ThP 212 **Automation of Plasma Processing for High-Throughput Proteomics;** Karen Merrell¹; Mark Holl¹; Konstantinos Petritis²; Darren Lewis³; Kelly Flook⁴; Yury Agroskin⁴; Deirdre Meldrum¹; ¹Arizona State University, Mesa, AZ; ²The Translational Genomics Research Institute, Phoenix, AZ; ³IDEX Corporation, Lake Forest, IL; ⁴Dionex Corporation, Sunnyvale, CA
- ThP 213 **Collaborative Methods Development in Drug Discovery;** Emily Miller⁴; Kevin Shirey²; Andrea Clouser-Roche⁴; Veronica Zelesky¹; Kevin Whalen¹; Sarah Osgood¹; John Janiszewski¹; Wayne Lootsma²; Anthony Romanelli³; ¹Pfizer Inc., Groton, CT; ²Sound Analytics, LLC, Niantic, CT; ³AB SCIEX, Framingham, MA; ⁴Pfizer, La Jolla, CA
- ThP 214 **Bioanalysis without Chromatography: the Evaluation of RapidFire Ultra-fast Online SPE-MS/MS System for Quantitation of Drugs in Biological Matrixes;** Wenying Jian¹; Michelle Romm²; Richard W. Edom¹; Vaughn Miller²; William A. Lamarr²; Naidong Weng¹; ¹J&J Pharmaceutical Research & Development, Raritan, NJ; ²BIOCIUS Life Sciences, Wakefield, MA
- ThP 215 **Speeding up the Dry Blood Spot Sampling with One Step Automated Multiple Extractions Combined with LDTD-MS/MS Analysis;** Pierre Picard; Patrice Tremblay; Serge Auger; *Phytronix Technologies, Quebec, QC*
- ThP 216 **Automated Magnetic Bead Based Sample Purification for High Throughput PCR Product Analysis on an ESI-TOF Mass Spectrometer;** Jared Drader; Jose Gutierrez; Steven Hofstadler; *Ibis Biosciences, Inc., Carlsbad, CA*
- ThP 217 **Fast Analysis by Mass Spectrometry with Supersonic Molecular Beams – Combining Fast Sampling and Ultra Fast GC-MS;** Alexander B. Fialkov; Alexander Gordin; Mati Morag; Aviv Amirav; *Tel-Aviv University, Tel-Aviv, Israel*
- ThP 218 **High Throughput Identification Analysis for Synthetic Chemicals by GC/HRTOFMS Coupling with EI/FI Ion Source;** Keisuke Ishii¹; Masaaki Ubukata²; Yoshihisa Ueda¹; Jyunichi Osuga¹; Kiyotaka Konuma¹; ¹JEOL Ltd., Akishima, Japan; ²JEOL USA Inc., Boston, MA
- METABOLOMICS: GENERAL II; 219 - 238**
- ThP 219 **Metabolic Stability and Pharmacokinetic Studies Suggest That the DAP Biomarkers May Lead to Overestimates of Organophosphate Pesticide Exposure;** Norman Forsberg; Rosetta Rodriguez-Proteau; L. Ma; Jeffrey Morre; Mark Christensen; Claudia Maier; JJ Jenkins; Kim Anderson; *Oregon State University, Corvallis, OR*
- ThP 220 **Metabolic Profiling and Imaging Metabolite Distribution of Pea Leaves by Mass Spectrometry;** Zhihong Song¹; Nickolas A. Hickman²; Young Jin Lee²; Edward S. Yeung³; Basil J. Nikolau²; ¹Ames Lab of US DOE/Iowa State University, Ames, IA; ²Iowa State University, Ames, IA; ³Ames Laboratory of US DOE, Ames, IA
- ThP 221 **Total Biochemical Response of Yeast to Floucytosine as Determined by IROA (Isotopic Ratio Outlier Analysis);** Chris Beecher¹; Maureen Kachman¹; Alexander Raskind¹; Francis Beecher²; Heidi Baum¹; Kari Bonds¹; ¹MCTP, Medical School, University of Michigan, Ann Arbor, MI; ²Soil and Crop Sciences, Texas A & M University, College Station, TX
- ThP 222 **Development of a Metabolomic Approach Based on LC-HRMS for the Screening of Anabolic Steroids in Equine Urine;** Natali Stojiljkovic^{1,2}; Marie-Agnes Popot¹; Yves Bonnaire¹; Alain Paris³; Christophe Junot⁴; Jean-Claude Tabet²; ¹LCH, Verrier le Buisson, France; ²UPMC, Paris, France; ³INRA, Paris, France; ⁴CEA, Saclay, France
- ThP 223 **Metabolomics Approach to Profiling Markers Key for Distinctions among Roots of *Panax ginseng*, *Panax quinquefolius* and *Panax notoginseng* by UPLC/oaTOFMS^E;** Li Yang¹; Han Han¹; Kate Yu²; Alan Millar²; Zhengtao Wang¹; ¹Shanghai University of TCM, Shanghai, CHINA; ²Waters Corporation, Milford, MA
- ThP 224 **Identification and Authentication of Terminalia species by Comprehensive Profiling Novel Chemical Markers using Metabolomics Strategy with UPLC/TOF MSE;** Bharathi Avula¹; Kate Yu²; Yan-Hong Wang¹; Alan Millar²; Ikhlas Khan³; ¹NCNP, University of Mississippi, University, MS; ²Waters Corporation, Milford, MA; ³Department of Pharmacognosy, Univ of Mississippi, University, MS
- ThP 225 **Metabolomics Profiling of G-Protein-Signaling Mutant Strains of Stagonospora Nodorum by Hybrid Quadrupole Time-of-Flight Mass Spectrometry;** Jeffrey D. Miller¹; Joel P.A. Gummer^{2,5}; Johnnie C. Brown¹; Garth L. Maker²; Robert Trengove²; Richard P. Oliver³; Peter S. Solomon⁴; Catherine C. Rawlinson²; ¹AB SCIEX, Framingham, MA; ²Separation Science and Metabolomics Laboratory, Perth, WA, Australia; ³School of Science, Curtin University of Tech., Perth, WA, Australia; ⁴School of Biology, The Australian National Univ., Canberra, ACT, Australia; ⁵Aust. Centre for Necrotrophic Fungal Pathogens, Perth, WA, Australia
- ThP 226 **Metabolomic Analysis of hypercholesterolemic Rats Injected with Berberine;** Sam Li; *National University of Singapore, Singapore, Singapore*
- ThP 227 **Improved Analysis and Profiling of Bile Acid Metabolites in Biological Tissues and Fluids;** Hong Yin; Erik Rocheford; Ryan Streeper; John Gounarides; *Novartis Institutes of Biomedical Research, Cambridge, MA*
- ThP 228 **Grape Seed Extract Metabolite Analysis following Ovariectomy in Rats;** John Cutts; Helen Kim; *UAB, Birmingham, AL*
- ThP 229 **Targeted Metabolomics in Zebrafish: Evidence for a Role of Vitamin C in Neurotransmitter and Nitric Oxide Synthesis;**

- Jay Kirkwood; Katie Lebold; Charlotte Wright; Galen Miller; Carrie Barton; Robert Tanguay; Maret Traber; Fred Stevens; *Oregon State University, Corvallis, OR*
- ThP 230 **Characterization of *Echinacea purpurea* Alkamides under Positive Electrospray Ionizations and Collision-Induced Dissociations**; Banibrata Ghosh¹; A. Daniel Jones¹; Basil Nikolau²; Ludmila Rizshsky²; Matt Crispin²; ¹*Michigan State University, East Lansing, MI*; ²*Iowa State University, Ames, IA*
- ThP 231 **Novel Approaches to Structure Elucidation and Confirmation for Plant Metabolomics**; Sven Heiling¹; Gabriela Zurek²; Emmanuel Gaquerel¹; Matthias Schoettner¹; Bernd Schneider¹; Wiebke Timm²; Jens Fuchser²; Aiko Barsch²; Ian T. Baldwin¹; ¹*MPI Chemical Ecology, Jena, Germany*; ²*Bruker Daltonik GmbH, Bremen, Germany*
- ThP 232 **Identification and Quantification of Short and Mid-Chain Coenzyme as in Hemp (*Cannabis sativa*) using UPLC and Tandem Mass Spectrometry**; Randy W. Purves; Jake M. Stout; Stephen J. Ambrose; Jonathan E. Page; *National Research Council, Saskatoon, Canada*
- ThP 233 **High Throughput Global Strain Interrogation of *S. Cerevisiae* using Targeted Metabolomics For Use in Industrial Systems Biology**; Nathan Moss; Connie Jen; Celeste Sandoval; Sara Gaucher; *Amyris Inc, Emeryville, CA*
- ThP 234 **A High Throughput Assay for Predicting Human Developmental Toxicity Using Human Embryonic Stem Cells and Metabolomics**; Paul R. West¹; Alan M. Smith¹; Kevin R. Conard¹; Burr R. Fontaine¹; Gabriela G. Cezar¹; April M. Weir-Hauptman²; ¹*Stemina Biomarker Discovery, Madison, WI*; ²*NanoOncology, Madison, WI*
- ThP 235 **An Exometabolomic Approach for Characterizing Chemically Induced Differentiation Pathways in HL60 Cells**; Qingfen Zhang; Mark Dodson; *Sanofi-Aventis Tucson Research Center, Tucson, AZ*
- ThP 236 **Global Metabolomics of *C. Elegans***; Yaoling Long; Jungsoo Han; Rebecca Butcher; David Powell; *Department of Chemistry, University of Florida, Gainesville, FL*
- ThP 237 **Global Metabolomic Profiles Reveal Aggressive Prostate Cancer Biomarker and Mechanism of Cancer Drug Action** Michael Milburn, Chief Scientific Officer Metabolon, Inc; Michael Milburn; *Metabolon, Inc., Durham, NC*
- ThP 238 **Global Metabolomics of Colon Cancer by Analysis of Human Plasma with LC/(+)-ESI-MS**; Noelle M. Elliott¹; John Koomen²; Umut Oguz²; Y. Ann Chen²; David Shibata²; Erin M. Siegel²; Richard A. Yost¹; David H. Powell¹; ¹*University of Florida, Gainesville, FL*; ²*H. Lee Moffitt Cancer Center, Tampa, FL*
- METABOLOMICS: UNTARGETED PROFILING II; 239 - 259**
- ThP 239 **Metabolite Biomarkers of Short Term Inflammatory Pain using MALDI-TOF MS**; Stanislav Rubakhin^{1,2}; Eric J Lanni^{1,2}; Jonathan Sweedler³; ¹*Beckman Institute, UIUC, Urbana, IL*; ²*Beckman Institute, UIUC, Urbana, IL*; ³*University of Illinois, Urbana, IL*
- ThP 240 **Towards a Universal LC-MS Method for Metabolomics**; Mark Szewc; Josef Ruzicka; *Thermo Fisher Scientific, Somerset, NJ*
- ThP 241 **Determining the Botanical Origins of Plant Resins Collected by Honey Bees (*Apis mellifera*) using LC-TOF Fingerprint Analysis**; Michael B. Wilson; Adrian D. Hegeman; Marla Spivak; Jerry D. Cohen; *University of Minnesota, Saint Paul, MN*
- ThP 242 **LC-MS Based Global Analysis of Detailed Metabolic Dynamics and Regiospecific Variations**; Miho Irie; Yoshinori Fujimura; Daisuke Miura; Hiroyuki Warishi; *kyushu university, Fukuoka, JAPAN*
- ThP 243 **Efficient Searching of Plant Photo-Response Molecules by the Live Single-Cell MS and Look-Up Metabolic Map Software**; Takashi Fujii; Hajime Mizuno; Naohiro Tsuyama; Takanori Harada; Tsutomu Masujima; *Hiroshima Univ. Grad. Sch. Biomed. Sci, Hiroshima, Japan*
- ThP 244 **High Throughput Metabolomics using FIA and a Novel MSMS Technique**; Ron Bonner; Stephen A. Tate; *AB SCIEX, Concord, Canada*
- ThP 245 **Optimising the Use of Quality Control Samples for Signal Drift Correction in Long Term Urine Metabolic Profiling Studies**; Mhmd Anas Kamleh; *Imperial College of London, London, UK*
- ThP 246 **Comprehensive Metabolomic Profiling of Zucker Rat Plasma using LC and GC Ultra High Resolution Time-of-Flight Mass Spectrometry and GCxGC-TOFMS**; Jeffrey S. Patrick; Kevin Siek; Joe Binkley; Lee Ott; John Heim; *LECO Corporation, St. Joseph, MI*
- ThP 247 **Metabolite Profiling of *Deinococcus radiodurans* to Discover the Basis for Radioresistance Conferred by Endogenous Nitric Oxide**; Qiuying Chen; *Cornell University Medical College, Bronx, NY*
- ThP 248 **Characterization of Urine Metabolites in Barth Syndrome Patients Employing a Non-Targeted GCMS Screening Approach**; Yana Sandler¹; Stephan Baumann²; ¹*Kennedy Krieger Institute, Baltimore, MD*; ²*Agilent Technologies, Inc., Santa Clara, CA*
- ThP 249 **A Multistep Analytical Strategy for Urinary Metabolites Identification**; Tiziana Pacchiarotta; *LUMC, Leiden, Netherlands*
- ThP 250 **UPLC-MS Metabolic Profiling for Risk Stratification of Stroke in Human Carotid Atherosclerosis**; Panagiotis A. Vorkas; Joseph Shalhoub; Claudia Monaco; Elizabeth J. Want; Matthew R. Lewis; Alun H. Davies; Jeremy K. Nicholson; Elaine Holmes; *Imperial College London, London, UK*
- ThP 251 **A Metabolomics Analysis of the Effects of Environmental Stress Combination on Arabidopsis Plants**; Carolina Salazar¹; David Peake²; Michael Athanas³; Yingying Huang²; Nobuhiro Suzuki¹; Ron Mittler¹; Vladimir Shulaev¹; ¹*University of North Texas, Denton, TX*; ²*Thermo Fisher Scientific, San Jose, CA*; ³*VAST Scientific, Inc., Cambridge, MA*
- ThP 252 **Untargeted Metabolomics Approach for Studying *C. Elegans* Embryonic Elongation using a Combination of Aqueous Normal Phase and Reverse Phase LC-ESI-TOF-MS**

- ThP 253 Fong Lam Chu; Sarah Jenna; Julien Schelpe; Lekha Sleno; *UQAM, Montreal, Canada*
Utilization of GCxGC-TOFMS to Screen for Potential Metabolite Differences in Pooled Samples from Lean, Fat, and Obese Zucker Rat Plasma; John R. Heim; Jeff Patrick; Joe Binkley; *LECO Corporation, St. Joseph, MI*
- ThP 254 **Evaluation of LC/MS/MS Methods for Identification and Differential Quantitation of Small-Molecule Components in Culture Media for Mammalian Cells**; Jason L. Richardson; Bhavana Shah; Pavel V. Bondarenko; Zhongqi Zhang; *Amgen, Inc., Thousand Oaks, CA*
- ThP 255 **GC-MS-Based Metabolomics Analysis of 3,2-Trans-Enoyl-CoA Isomerase Knockdown Mutants in Human Hepatoma Cells**; Xiaoli Gao¹; Angela L. Rasmussen²; Melissa M. Matzke¹; Deborah L. Diamond²; Michael G. Katze²; Richard D. Smith¹; Thomas O. Metz¹; ¹*Pacific Northwest National Labs, Richland, WA*; ²*University of Washington, Seattle, WA*
- ThP 256 **Non-Invasive Deep Metabotyping for de novo Biomarker Discovery and Personalized Medicine**; Philippe Schmitt-Kopplin; Franco Moritz; Marianna Lucio; Norbert Hertkorn; Istvan Gebefugi; *Helmholtz Zentrum Muenchen, Oberschleisheim, Germany*
- ThP 257 **Metabolome-Genome Associations in Barley Grain and Malt**; Corey Broeckling¹; Adam Heuberger¹; Laura Witte¹; Gary Hanning²; Elizabeth Ryan¹; Jessica Prenni¹; ¹*Colorado State University, Fort Collins, CO*; ²*Anheuser Busch, Fort Collins, CO*
- ThP 258 **Development of a Plant Secondary Metabolite, Tandem Mass Spectral Library Using a Triple Quadrupole LC-MS/MS**; Zhentian Lei; BJ Bench; John Snyder; David Huhman; Lloyd W. Sumner; *The Samuel Roberts Noble Foundation, Ardmore, OK*
- ThP 259 **Cross-Platform Correlation in Global Metabolomics Studies**; Hongping Dai; *Metabolon, Inc., Durham, NC*
- LIPIDS: PROFILE ANALYSIS; 260 - 289**
- ThP 260 **Lipidomic Biomarkers for Ovarian Cancer by LC Separated and Infusion Based ESI-MS**; Stephen Wong¹; Aaron Zefrin Fernandez²; Lissya Lettisia Santoso²; Narasimhan Kothandaraman²; Mahesh Choolani²; Mark Ritchie¹; Markus Wenk²; ¹*Waters Pacific Pte Ltd, Singapore, Singapore*; ²*National University of Singapore, Singapore, Singapore*
- ThP 261 **Observation of Anti-Cancer Drug Influence on Ganglioside Profiles using 15T FT-ICR MS**; Hee Young An^{1,2}; Kyung Oh Shin²; Yong Moon Lee²; Kyu Hwan Park¹; Hyun Sik Kim¹; ¹*Korea Basic Science Institute, Ochang-Myun Cheongwon-Gun, South Korea*; ²*Chungbuk National University, Cheongju, South Korea*
- ThP 262 **Mapping the HEPG2 Lipidome as Affected by Niacin using Products of All Acquisition on a new generation Q Q TOF**; Phillip Sanders¹; Ming-Shang Kuo¹; David A. Yurek¹; Ron Bonner²; Lyle Burton²; Eva Duchoslav²; Brigitte Simons²; ¹*Eli Lilly, Indianapolis, IN*; ²*AB SCIEX, Concord, ON*
- ThP 263 **Lipid Profiling of Murine Hepatocytes-Derived Lipid Droplets by Reversed Phase Chromatography Online-Coupled to Fourier Transform Mass Spectrometry**; Alexander Fauland¹; Martin Trötzlmüller²; Jürgen Hartler¹; Harald Köfeler²; Ernst Lankmayr¹; ¹*Technical University Graz, Graz, Austria*; ²*Center for Medical Research, Graz, Austria*
- ThP 264 **Direct Analysis of Microalgae Triacylglycerides Using MALDI-TOF and LTQ-Orbitrap Mass Spectrometry**; Megan Danielewicz; Lisa Anderson; Annaliese Franz; *University of California, Davis, Davis, CA*
- ThP 265 **A Lipidomic Analysis of White Adipose Tissue From Rats After dosing with a Peroxisome Proliferator Activated Receptor (PPAR)-pan Agonist**; John P. Shockcor^{1,2}; Helen J. Atherton²; Julian L. Griffin²; ¹*Waters Corp, Milford, MA*; ²*University Of Cambridge, Cambridge, UK*
- ThP 266 **LC-MS Lipid Profiling of Blood Plasma From Normal and Incident Alzheimer's Disease Subjects from Two Communities: African American and Nigerian Populations**; Loubna Hammad¹; Yuening Zhang¹; Katie Lane²; Yehia Mechref¹; Kathleen Hall²; Jonathan Karty¹; ¹*Department of Chemistry, Indiana University, Bloomington, IN*; ²*Indiana University School of Medicine, Indianapolis, IN*
- ThP 267 **A Sphingolipidomic Analysis of Tuberculosis Infected Human Urine Samples**; Brandy Young; Bianca Amos-Brown; Julian Peters; Jonathan Peter; Keertan Dheda; Jonathan Blackburn; *University of Cape Town, Observatory, South Africa*
- ThP 268 **Sensitive Steroid Metabolome Analysis on the Basis of High Performance Liquid Chromatography-Tandem Mass Spectrometry with Proton-Affinitive Derivatization**; Kouwa Yamashita; Sachiko Komatsu; Hajime Katoh; Madoka Takahashi; Mitsuteru Numazawa; *Tohoku Pharmaceutical University, Sendai, Japan*
- ThP 269 **Lipidomic Study of Post-Mortem Brain Tissue of Alzheimer's Disease Patients using Combined Untargeted and Targeted Approaches**; Mathieu Gaudin^{1,2}; Maï Panchal^{4,5}; Sophie Aycirix¹; Delphine Dargère¹; Erwan Werner³; David Touboul²; Nicolas Auzeil¹; Alain Brunelle²; Charles Duyckaerts^{4,5}; Olivier Laprévote^{1,2}; ¹*C-TAC, Université Paris Descartes, Paris, France*; ²*Institut de Chimie des Substances Naturelles, CNRS, Gif-sur-Yvette, France*; ³*Division Métabolisme, Technologie Servier, Orléans, France*; ⁴*Laboratoire de Neuropathologie Escourrolle, Paris, France*; ⁵*Centre de recherche de l'ICM, Paris, France*
- ThP 270 **Identification of Phospholipids in MTBE Extract of Mouse Brain by Microfluidic Chip-based Mass Spectrometry**; TaeSeong Park¹; Man Hoi Hur²; Sunghwan Kim³; Young Hwan Kim^{1,4}; ¹*Korea Basic Science Institute, Cheongwon-Gun, South Korea*; ²*Department Of Bioinformatics, Korea University, Seoul, South Korea*; ³*kyungpook National University, Daegu, South Korea*; ⁴*grast In Chungnam National University, Daejeon, South Korea*
- ThP 271 **Profiling of Phospholipids in Rat Brain Parenchyma after Ischemic Stroke**; Hay-Yan J. Wang; Cheng Bin Liu; Hsuan-Wen Wu; Ya-Zhe Lee; *National Sun Yat-Sen University, Kaohsiung, Taiwan*
- ThP 272 **Lipid Profile of a Mouse Model of Blast Induced Traumatic Brain Injury**; Amina S.

- ThP 273 **Application of HPLC ESI Tandem Mass Spectrometry in the Study of Eicosanoid Signaling During the Wound Healing Process;** Dayanjan Wijesinghe^{1,2}; Charles Chalfant^{1,2}; ¹Hunter Holmes McGuire VA Medical Center, Richmond, VA; ²Virginia Commonwealth University, Richmond, VA
- ThP 274 **Simultaneous Analyses of 87 Oxylipins by Fused-Core Liquid Chromatography Tandem Mass Spectrometry;** Jun Yang¹; Bruce D. Hammock¹; Xiao Su²; ¹University of California, Davis, Davis, CA; ²University of California, San Francisco, San Francisco, CA
- ThP 275 **Development of a Rapid, Non-Invasive Method for Profiling Stratum Corneum Ceramides Employing D-Squame Disks and Hybrid ESI FT-ICR Mass Spectrometry;** Larry Lerno¹; Jennifer Smilowitz^{2,3}; J.B. German^{2,3}; Carlito Lebrilla¹; ¹University of California, Davis, CA; ²UC Davis, Foods for Health Institute, Davis, CA; ³UC Davis, Food Science and Technology, Davis, CA
- ThP 276 **Age-Related Alterations in Human Lens Lipids;** Jessica R Hughes¹; Jane M. Deeley¹; Shane Ellis¹; Stephen J Blanksby¹; Roger JW Truscott²; Todd W Mitchell¹; ¹University of Wollongong, Wollongong, Australia; ²Save Sight Institute, University of Sydney, Sydney, Australia
- ThP 277 **Comparison of Lipid Profiles of Human Meibum from Dry Eye Patients: Drug vs. Placebo Treatment Using ESI-QTOF and MALDI-TOF/TOF-MS;** Kari Green-Church¹; Nan M Kleinholz¹; Jianzhong Chen²; Kelly K Nichols¹; ¹The Ohio State University, Columbus, OH; ²HJF/AFRL, Columbus, OH
- ThP 278 **Multidimensional Mass Spectrometric Analysis of Phospholipids in Alkali Injured Human Cornea;** Ashley Crane²; Andrew Coggin²; Roger Moore¹; Kossi Lekpor¹; Byron Lam²; Sanjoy Bhattacharya²; Gabriel Gujiu¹; ¹City of Hope, Duarte, CA; ²Bascom Palmer Eye Institute, Miami, FL
- ThP 279 **Sterolomics in the Dallas Heart Study: Measuring 60 Sterols in 3200+ Human Serum Samples;** Ashlee Stiles; Bonne Thompson; Daphne Davis; Daniel Smith; Jeff McDonald; UT Southwestern Medical Center, Dallas, TX
- ThP 280 **Ecdysteroidome of Developing Drosophila Melanogaster;** Oksana Lavrynenko; Maria Carvalho; Julio Sampaio; Suzanne Eaton; Andrej Shevchenko; MPI CBG, Dresden, Germany
- ThP 281 **Development of Polar Lipid Profiling Method by Supercritical Fluid Chromatography/Mass Spectrometry;** Takeshi Bamba; Takashi Yamamoto; Jae Won Lee; Takato Uchikata; Atsuki Matsubara; Eiichiro Fukusaki; Dept. Biotech., Grad. Sch. Eng., Osaka Univ., Suita, Osaka, Japan
- ThP 282 **Development of Oxidized Phosphatidylcholines Profiling Method by Supercritical Fluid Chromatography/Tandem Mass Spectrometry;** Takato Uchikata¹; Atsuki Matsubara¹; Shin Nishiumi²; Masakazu Shinohara²; Masaru Yoshida²; Eiichiro Fukusaki¹; Takeshi Bamba¹; ¹Dept. Biotech., Grad Sch. Eng., Osaka Univ., Suita, Japan; ²Grad. Sch. Med., Kobe Univ., Kobe, Japan
- ThP 283 **Development of Metabolic Profiling Method for Carotenoid Oxidation Products using Supercritical Fluid Chromatography Coupled With Tandem Mass Spectrometry;** Atsuki Matsubara¹; Takato Uchikata¹; Masakazu Shinohara²; Masaru Yoshida²; Eiichiro Fukusaki¹; Takeshi Bamba¹; ¹Dept. Biotech., Grad Sch. Eng., Osaka Univ., Suita, Japan; ²Grad. Sch. Med., Kobe Univ., Kobe, Japan
- ThP 284 **The Analysis of Bioactive Lipid Fractions Isolated from Green-Lipped Mussel (Perna canaliculus) using Gas Chromatography-Mass Spectrometry;** Glenn Marrow¹; Catherine Rawlinson²; Robert Trengove³; Paul Wynne⁴; Nicolette Kalafatis¹; Theodore Macrides¹; ¹RMIT University, Melbourne, Australia; ²Metabolomics Australia, Murdoch University Node, Perth, Australia; ³Murdoch University, Murdoch, Australia; ⁴Shimadzu Scientific Instruments (Ociana) Pty Ltd, Melbourne, Australia
- ThP 285 **Several Different Approaches for the Analysis in Localization Profile of Lipid Molecular Species by Mass Spectrometry;** Ryo Taguchi^{1,2}; Kazutaka Ikeda²; Yoko Tajima²; ¹Chubu University, Kasugai, Aichi, Japan; ²JST, CREST, Saitama, Japan
- ThP 286 **Serum Lipid Profiling and Identification using High Resolution LC-MS and HCD Fragmentation;** Susan S. Bird; Vasant Marur; Matthew Sniatynski; Bruce Kristal; Brigham and Women's Hospital, Boston, MA
- ThP 287 **Utilising Normal Phase UPLC for Class Distinct Separation of Lipids in Less Than 10 Minutes;** Stephen C.C. Wong; Evelyn M.L. Goh; Mark Ritchie; Waters Pacific Pte Ltd, Singapore, Singapore
- ThP 288 **A Novel Global Lipid Biomarker Workflow from a Complex Biological Sample;** Giorgis Isaac Mezengie; Henry Shion; Stephen McDonald; John P. Shockcor; Alan Millar; Waters Corporation, Milford, MA
- ThP 289 **Thermal Assisted Easy Ambient Sonic Spray Ionization (T-EASI) for Triacylglycerides (TAG) Profile in IVF- and NT-Derived Bovine Placentas;** Andréia M Porcari¹; Carlos Eduardo Ambrosio²; Jesu Vergilio Visentainer^{1,3}; Marcelo Bertolini^{4,5}; Renato PC Gerger⁷; Flávio Vieira Meirelles²; Elaine Cristina Cabral¹; Mirela Batista Coelho¹; Eduardo J Pilau⁶; Fabio C Gozzo⁶; Felipe Perecin²; Maria Angélica Miglino⁷; Christina Ferreira¹; Marcos N Eberlin¹; ¹ThoMSon Lab UNICAMP, Campinas, Sp, Brazil; ²Basic Sciences Department, FZEA - USP, Pirassununga, SP, Brazil; ³UEM, Maringá, PR, Brazil; ⁴UDESC, Lages, SC, Brazil; ⁵UNIFOR, Fortaleza, CE, Brazil; ⁶IQ - University of Campinas, Campinas, Brazil; ⁷Surgery Department, FMVZ-USP, São Paulo, SP, Brazil

LIPIDS: QUANTITATIVE ANALYSIS; 290 - 298

- ThP 290 **High Throughput Quantitative Analysis of Polyunsaturated Fatty Acids in Patients with Atherosclerosis Disease using LC-MS/MS;** Katsumi Furukawa¹; Yasuhiro Wada¹; Yuka Fujito²; Kiyomi Arakawa³; Jun Watanabe³; ¹Mitsubishi Chemical Medicine Corporation, Tokyo, Japan; ²Shimadzu Analytical & Measuring Center, inc.,

- Kyoto, Japan; ³Shimadzu Corporation, Kyoto, Japan
- ThP 291 **C26:0-Lysophosphatidylcholine Analysis in Dried-Blood Spots via Negative-Ion Mode HPLC-ESI-MS/MS: Moving Towards Newborn Screening for X-Linked Adrenoleukodystrophy;** Christopher A. Haynes; Victor R. De Jesus; *Centers for Disease Control and Prevention, Atlanta, GA*
- ThP 292 **Quantitative Analysis of Sulfatides in Neurological Specimens using LC-MS-MS;** Zhiyuan Sun¹; Chenqi Hu¹; Katarzyna Pituch²; Aurora Lopez-Rosas²; Richard B. van Breemen¹; Maria Irene Givogni²; ¹University of Illinois College of Pharmacy, Chicago, IL; ²University of Illinois College of Medicine, Chicago, IL
- ThP 293 **Quantitative and Qualitative Analysis of Mitochondrial Phospholipids by HPLC-ESI-MS;** Junhwan Kim¹; Charles Hoppel²; ¹Case Western Reserve University, Cleveland, OH; ²Case Western Reserve University, Cleveland, OH
- ThP 294 **Non-Target Lipidomic Quantitation Using HILIC-LC/MS and Off-line 2D-LC/MS/MS;** Michal Holčápek¹; Eva Cífková¹; Miroslav Lísá¹; Kateřina Netušilová¹; Hana Dvořáková¹; Pat Sandra²; ¹University of Pardubice, Pardubice, Czech Republic; ²University of Ghent, Ghent, Belgium
- ThP 295 **Information Independent MS/MS Data Collection of All Precursors Using Time-of-Flight Mass Spectrometry;** Brigitte Simons; Eva Duchoslav; Lyle Burton; Tanya Gamble; Ron Bonner; *AB SCIEX, Concord, Canada*
- ThP 296 **Development and Validation of the LC/MS/MS Quantification Method for the Phospholipid Drug Impurities Analysis;** Mingkun Fu; *Ph.D, Cambridge, MA*
- ThP 297 **Utilizing Ion-Trap Mass Spectrometry to Determine Lipid Composition of Fermenting Yeast to Elucidate the Critical Lipid Components of Alcohol Resistance;** Clark Henderson; *Univeristy of California, Davis, Davis, CA*
- ThP 298 **Lipidomics with High Spatial Resolution;** Sarita Hebbar; Dominik Schwudke; *National Centre for Biological Sciences, TIFR, Bangalore / Bengaluru, India*
- AGRICULTURE; 299 - 313**
- ThP 299 **Analysis Of Switchgrass Biomass By Direct Analysis In Real Time (DART) For Biofuel Production;** Sushma Dendukuri¹; Darrin Smith¹; Gary Selby²; Don Llewellyn²; ¹Eastern Kentucky University, Chemistry Department, Richmond, KY; ²Eastern Kentucky University, Agriculture, Richmond, KY
- ThP 300 **Proteogenomic Analysis and in Silico Structural and Functional Annotation in Search for Effectors of the Barley Powdery Mildew *Blumeria Graminis*;** Laurence V. Bindschedler¹; Liam J. McGuffin¹; Tim Burgis²; Pietro D. Spanu²; Rainer Cramer¹; ¹University of Reading, Reading, UK; ²Imperial College, London, UK
- ThP 301 **Label-Free Proteomics for Examination of Corn (*Zea mays*) Leaf Response to Wounding;** Pamela Jensen; Leah Riter; Ewa Urbanczyk-Wochniak; Joan Ballam; Susan MacIsaac; Henry Valentin; *Monsanto, St. Louis, MO*
- ThP 302 **Free Amino Acid Quantitation in Corn Leaf Tissue using Desorption Electrospray Ionization (DESI);** Leah Riter¹; Wayne Brown¹; Ewa Urbanczyk-Wochniak¹; Jeffrey Patrick³; Kevin Siek³; Viatcheslav Artaev³; Brian C. Laughlin²; Joseph H. Kennedy²; Susan MacIsaac¹; ¹Monsanto, St. Louis, MO; ²Prosolia Inc, Indianapolis, IN; ³LECO Corporation, Saint Joseph, MI
- ThP 303 **Analysis of Neurotoxic Mycotoxins in Maize Silage with LC-MS/MS;** Annica Tevell Åberg^{1,2}; Alexey Solyakov¹; Ann Nyman¹; Ulf Bondesson^{1,2}; ¹National Veterinary Institute, Uppsala, Sweden; ²Uppsala University, Uppsala, Sweden
- ThP 304 **Qualitative and Quantitative Measurement of the Small Molecular Weight Proteomes of Sterile and Fertile Maize Anthers at Two Developmental Stages;** Chris Adams; Dongxue Wang; John Fernandes; Rachel Egger; Allis Chien; Virginia Walbot; *Stanford University, Stanford, CA*
- ThP 305 **Metabolite Profiling of Canola Grown Under Limiting Nitrogen Conditions;** Gia C. Fazio; Ndakaku Omelu; Brian Conlin; Wayne Skinner; Jos van Bostel; Jean C. Kridl; *Arcadia Biosciences, Davis, CA*
- ThP 306 **Characterization of the Cell Wall Proteome of Tomato (*Solanum lycopersicum*) Fruit by Tandem Mass Spectrometry;** Miaoqing Shen¹; Simon Hucko²; Kevin Howe³; Michelle Cilia³; Theodore Thannhauser³; ¹Boyce Thompson Institute for plant research, Ithaca, NY; ²Cornell University, Ithaca, NY 14853; ³USDA-ARS, RWH Center for Agriculture and Health, Ithaca, NY
- ThP 307 **Characterization of the Cell Wall Glycoproteome of Tomato (*Solanum lycopersicum*) Fruit by Tandem Mass Spectrometry;** Miaoqing Shen¹; Simon Hucko²; Kevin Howe³; Michelle Cilia³; Sheng Zhang²; Yong Yang³; ¹Theodore W Thannhauser³; ¹Thompson Institute for Plant Research, Ithaca, NY; ²Cornell University, Ithaca, NY; ³R. W. Holley Center for Agriculture and Health, US, Ithaca, NY
- ThP 308 **Analysis of Quinolones in Different Food Matrices by Means of LC-MS/MS;** Pavel Metalnikov; Alexander Komarov; *VGNKI, Moscow, Russian Federation*
- ThP 309 **Quantitative Proteomic Analysis of Cold Stress in Rice;** Karlie A. Neilson; Michael Mariani; Paul A. Haynes; *Macquarie University, North Ryde, Australia*
- ThP 310 **Gas Chromatography-Time of flight – Mass Spectrometry Profiling of Glycosylated Aroma Precursors in Riesling Winegrapes during Berry Ripening;** Imelda Ryona; Justine Vanden Heuvel; Gavin Sacks; *Cornell University, Geneva, NY*
- ThP 311 **HTP Multiplexed Protein Quantifications in Transgenic Crops by LC-MS/MS;** X. Tiger Hu; *Pioneer/DuPont, Johnston, IA*
- ThP 312 **Acid-Degradation Kinetics of Insulin-Like Growth Factor I (IGF-1) Probed by Liquid Chromatography-Mass Spectrometry;** Collin Graves²; Kevin Quinn¹; Troy Wood¹; ¹University at Buffalo, Buffalo, NY; ²Greenwich High School, Greenwich, NY

- ThP 313 **Detection of the Mycotoxin Lolitrem B in Bovine Urine and Feces by LC-MS/MS**; Lia Murty; *Oregon State University, Corvallis, OR*
FLAVORS AND FRAGRANCES; 314 - 316
- ThP 314 **Real-Time Monitoring of Volatile Organic Compounds from Foods and Beverages by Hybrid Linear Ion Trap – Triple Quadrupole MS System**; Feng Zhong; Peter Kovarik; Jeffrey Rivera; Eva Duchoslav; Robert Ellis; Rebecca Wittrig; Takeo Sakuma; *AB SCIEX, Concord, Canada*
- ThP 315 **UHPLC-ESI-Q-TOF Analysis of Proanthocyanidins in Grape Seeds and Red Wine**; Adéline Delcambre¹; Yann André¹; Dawn Visintainer¹; Richard Barry²; Cédric Saucier¹; ¹University of British Columbia, Kelowna, Canada; ²Agilent Technologies, Santa Clara, CA
- ThP 316 **Predictive Classification of Contaminants Encountered During the Distillation of Shochu, a Distilled Beverage Native to Japan**; Toshiyuki Yamashita¹; Takeshi Serino²; David Peterson²; Anthony Gray²; ¹Kinryo Electric Co. Ltd., Osaka, Japan; ²Agilent Technologies, Santa Clara, CA
NATURAL PRODUCTS II; 317 - 336
- ThP 317 **Determination of Tyrosol and Hydroxytyrosol by Tandem Spectrometry and Isotope Dilution Approach in Olive Oil as Marker of Quality**; Fabio Mazzotti; Hicham Benabdelkamel; Leonardo Di Donna; Loredana Maiuolo; Anna Napoli; Giovanni Sindona; *Dipartimento di Chimica Università della Calabria, Arcavacata Di Rende, Italy*
- ThP 318 **Simultaneous Quantification of 7 Bioactive Polyphenolic Compounds in Menerba by a High Throughput LC-MS/MS Method**; Hong Zhou¹; Xiaochuan Li¹; Kim B. Plath¹; Michael S. Hathaway¹; Richard E. Staub²; Uwe Christians^{1,3}; Isaac Cohen²; Yan Ling Zhang¹; ¹Bionovo, Aurora, CO; ²Bionovo Inc., Emeryville, CA; ³University of Colorado HSC, Denver, CO
- ThP 319 **Qualitative and Quantitative Analyses of Chiral Isomers (Eipgoitrin/Goitrin) from Isatis Indigotica Fort Root Extract using SFC-MS**; Jacquelyn Runco¹; Li Yang³; Kate Yu²; Rui Wang³; Yiming Li³; Zhengtao Wang³; Fred Li⁴; Alan Millar²; Rui Chen¹; ¹Waters Corporation, SFC Division, Newark, DE; ²Waters Corporation, Milford, MA; ³Shanghai Traditional Chinese Medicine University, Shanghai, P. R. China; ⁴Roche R&D (China) Ltd., Shanghai, P. R. China
- ThP 320 **Quinoa Seed Extract Quality Control Procedure using Linoleic Acid as Biomarker in LDTD-MS/MS**; Eric Deschenes¹; Serge Auger²; Johane Guay¹; ¹Biopharmacoepa, Quebec, Canada; ²Phytronix Technologies, Quebec, Canada
- ThP 321 **Discovery Of Natural Product Ligands of Human RAR-Gamma using Ultrafiltration UHPLC-MS-MS**; Ke Huang; Guowen Liu; Jerry J. White; Richard B. Van Breemen; *University of Illinois College of Pharmacy, Chicago, IL*
- ThP 322 **Anthocyanins in Three Species of Passiflora**; Alexandra Sawaya; Lilian Aizza; Marcelo Dornelas; Paulo Mazzafera; *Department of Plant Biology, IB, UNICAMP, Campinas, Sp, Brazil*
- ThP 323 **Structural Characterization of Anthocyanins: Multi-Dimensional Fragmentation Pathways Using High Performance Liquid**
- Chromatography-Electrospray Ionization-Ion Trap-Time of Flight Mass Spectrometry**; Jeremy S Barnes; Kevin Schug; *University of Texas at Arlington, Arlington, TX*
- ThP 324 **Method Development and Validation for the Analysis of Red Noble Muscadine Berries using HPLC-Q-TOF**; Frank D'Amelio¹; Youssef Mirhom¹; Yuping Williamson¹; Christopher Hardwick²; Steve Baugh²; Paula Schulbaum¹; Erin Krueger¹; ¹Bio-Botanica, Inc, Hauppauge, NY; ²ChromaDex, Boulder, CO
- ThP 325 **Analysis of Anthocyanins with High Selectivity Utilizing Liquid Chromatography Combined with Advanced Mass Spectrometric Detection**; Mikael Fridén; Sarah Steimer; Per Sjöberg; *Analytical chemistry, UU, Uppsala, Sweden*
- ThP 326 **Analysis of Anthocyanins in Pomegranates using LC/MS/MS**; Casey C. Grimm; Steven Lloyd; Rebecca E. Stein; John C. Beaulieu; *USDA-ARS-SRRC, New Orleans, LA*
- ThP 327 **Plant Phenolics Characterization Using a SYNAPT G2 HDMS System**; Li Zhang¹; Fereshteh Zandkarimi¹; Sasidhar Nirudodhi¹; Gouthu Satyanarayana¹; Anatoly Chlenov²; Laurent Deluc¹; Fred Stevens¹; Claudia Maier¹; ¹Oregon State University, Corvallis, OR; ²PerkinElmer, San Jose, CA
- ThP 328 **HPLC-Mass Spectrometry Applied on the Phenolic Compounds Identification in *E. globulus*, *E. grandis*, *E. urograndis* and *E. maidenii* Bark Extracts**; Sónia A. O. Santos¹; Carmen S. R. Freire¹; M. Rosário M. Domingues²; Armando J. D. Silvestre¹; Carlos Pascoal Neto¹; ¹Dep. of Chemistry, CICECO, University of Aveiro, Aveiro, Portugal; ²Dep. of Chemistry, QOPNA, University of Aveiro, Aveiro, Portugal
- ThP 329 **Tandem Mass Spectrometric Structural Characterization of Cyclic Peptides: Revisited**; Takemichi Nakamura¹; Hiroyuki Koshino¹; Ken-ichi Harada²; ¹RIKEN, Wako, Japan; ²Meijo Univ., Nagoya, Japan
- ThP 330 **Sequencing Cyclic Peptides by Multistage Mass Spectrometry**; Hosein Mohimani¹; Yu-Liang Yang¹; Wei-Ting Liu¹; Pei-Wen Hsieh²; Pieter C. Dorrestein¹; Pavel A. Pevzner¹; ¹University of California, San Diego, La Jolla, CA; ²Chang Gung University, Tao-Yuan, Taiwan
- ThP 331 **A Natural Cycle – Proteomics Reveals the Biosynthetic Route of Cyclic Peptides while Bioinformatics Provides the Foundations for their Discovery**; Michelle Colgrave¹; Joshua Mylne²; Aaron Poth²; Hosein Mohimani³; Alun Jones²; Pavel Pevzner³; David Craik²; ¹CSIRO, St Lucia, Australia; ²The University of Queensland, Brisbane, Australia; ³University of California San Diego, San Diego, CA
- ThP 332 **Structural Characterization of c-glycosyl Flavonoids of a Plant Dye from a Latin American Textile by Liquid Chromatography Mass Spectrometry**; Nobuko Shibayama¹; Jeffrey H. Dahl²; Robert Buco²; Elena Phipps³; Lucy Commoner⁴; ¹Metropolitan Museum of Art, New York, NY; ²Shimadzu Scientific Instruments, Columbia, MD; ³Independent Scholar, New York, NY; ⁴Cooper-Hewitt National Design Museum, New York, NY

- ThP 333 **High Energy CID MS/MS Study of Natural Products using MALDI-SpiralTOF-TOF Tandem Mass Spectrometer**; Yoshiyuki Itoh¹; Ayumi Kubo¹; Masahiro Hashimoto¹; Jun Tamura¹; Hideo Naoki²; ¹JEOL Ltd., Akishima, Japan; ²University of the Ryukyus, Okinawa, Japan
- ThP 334 **Characterization of Antiplasmodial Indole Alkaloids from *Geissospermum vellosii* Bark by LCMS-IT-TOF Technology**; Flaubert Mbeunkui¹; Mary Grace¹; Carmen Lategan²; Peter Smith²; Ilya Raskin³; Mary Ann Lila¹; ¹NC State University, NC Research Campus, Kannapolis, NC; ²University of Cape Town, Cape Town, South Africa; ³Rutgers University, New Brunswick, NJ
- ThP 335 **Characterization of Siderophores isolated from cell cultures using RPHPLC coupled to Ultra High-resolution Time-of-Flight Mass Spectrometry**; Nicholas Hall¹; Jeffrey Patrick¹; Kevin Siek¹; Joe Binkley¹; Jeffrey P. Henderson²; Kaveri Chaturvedi²; Jan Crowley²; ¹LECO Corporation, St. Joseph, MI; ²Washington University School of Medicine, St. Louis, MO
- ThP 336 **Development of Signal Ratio Based Antioxidant Index for Assisting Identification of Polyphenolic Compounds by Mass Spectrometry**; Jhe-Yi Liao; Kuo-Lung Ku; National Chiayi University, Chiayi City, Taiwan
- ENERGY: BIOFUELS AND ALGAE; 337 - 351**
- ThP 337 **ESI Analysis of Bio-Oils from Biomass Pyrolysis: Comparative Study between Orbitrap and FT-ICR**; Soo Jin Park¹; Erica Smith¹; Robert Brown²; Young Jin Lee¹; ¹Chemistry and Ames Lab, Iowa state University, Ames, Iowa; ²Bioeconomy Institute&Chemical engineering ISU, Ames, Iowa
- ThP 338 **Characterization of Slow & Fast Pyrolysis Bio-Oils Before & After Catalytic Upgrading by Ultrahigh Resolution FT-ICR Mass Spectrometry**; Jacqueline M. Jarvis¹; Amy M. McKenna²; Roger N. Hilten³; K. C. Das³; Ryan P. Rodgers^{1,2}; Alan G. Marshall^{1,2}; ¹Florida State University, Tallahassee, FL; ²National High Magnetic Field Laboratory, Tallahassee, FL; ³University of Georgia, Athens, GA
- ThP 339 **ESI-MS and ESI-MS/MS as a Toll to Evaluate Upgrading Processes of Bio-Oils**; Rosana Cardoso Lopes Pereira¹; Patrícia Verardi Abdelnur²; Marco Antonio Gomes Teixeira¹; Emmamuelle Sales Retori¹; Marlon Brando Bezerra de Almeida¹; ¹PETROBRAS, Rio De Janeiro, BRAZIL; ²Embrapa Agroenergy, Brasília, Brazil
- ThP 340 **Molecular Characterization of Biochar and Laser-induced *in situ* Fullerene Synthesis**; Daniel Cole¹; Aasim Azad¹; Erica Smith¹; Robert Brown³; Young Jin Lee^{1,2}; ¹Chemistry Department, Iowa State University, Ames, IA; ²Ames Lab, US-DOE, Ames, IA; ³CSET, Iowa State University, Ames, IA
- ThP 341 **Investigation of Dissolved Organic Carbon from Water Extracts of Switchgrass Biochars by Electrospray Ionization/Mass Spectrometry**; Colleen Rostad; David Rutherford; USGS, WRD, NRP, Lakewood, CO
- ThP 342 **Characterization of Heptadecane and Hexadecanol Contained in Microalgae Biodiesel Extracted from *Nostoc sp.***; Injoon Yeo¹; Yunju Cho¹; Ji-Eun Jeong¹; Ji Won Hong²; Ho-Sung Yoon²; Sung Hong Kim³; Sunghwan Kim¹; ¹Kyungpook National University, Dep. of Chemistry, Daegu, South Korea; ²Kyungpook National University, Dep. of Biology, Daegu, South Korea; ³Korea Basic Science Institute, Daegu Center, Daegu, South Korea
- ThP 342 **Characterization of Biomass Oils and Fuels: Algae Lipids**; Chang Samuel Hsu¹; Huan He²; Jie Lu¹; Vladislav V. Lobodin²; Mark R. Emmett^{2,3}; Alan G. Marshall^{2,3}; ¹Future Fuels Institute, Florida State University, Tallahassee, FL 30310; ²Natl. High Magnetic Field Lab., Florida State Univ, Tallahassee, FL 30310; ³Dept. of Chem. and Biochem., Florida State Univ., Tallahassee, FL
- ThP 344 **Relative Response Factors of Algae Lipids by ESI LC/MS**; Alyssa Redding-Johanson; Blanca Ruvalcaba; Stilianos Roussis; Sapphire Energy, San Diego, CA
- ThP 345 **Algae Crude Oil: A New Source of Hydrocarbon Based Fuels Derived from Algaenan**; E. Adair Johnson; Old Dominion University, Norfolk, VA
- ThP 346 **Laserspray Ionization (LSI)- and Matrix-Assisted Inlet Ionization (MAII)-Ion Mobility Spectrometry (IMS)-Mass Spectrometry (MS) for the Analysis of Biofuels**; Leonard Payne; Ellen D. Inutan; Haiying Tang; Steve Salley; Sarah Trimpin; Wayne State University, Detroit, MI
- ThP 347 **Development of Mass Spectrometric Techniques for the Analysis of Lignocellulosic Biofuels**; Jennifer Reece¹; Wolfgang Schrader²; ¹Max-Planck-Institut fuer Kohlenforschung, Muelheim An Der Ruhr, Germany; ²Max-Planck Inst Coal Res., Mülheim / Ruhr, Germany
- ThP 348 **Characterization of Nitro Aromatic Compounds in Biodiesel Exhaust From Industrial Equipment**; Kirk Jensen¹; Kent Voorhees¹; Robert McCormick²; Nora Traviss³; ¹Colorado School of Mines, Golden, CO; ²National Renewable Energy Laboratory, Golden, CO; ³Keene State College, Keene, NH
- ThP 349 **Mass Spectrometric Approaches to the Study of Bacterial Metabolomes Aimed at Diagnosis of Anaerobic Hydrocarbon Degradation and Associated Biocorrosion**; Jan Sunner¹; Bernadett Biri¹; Iwona Beech²; Matthew Kowalski¹; Joe Suflita¹; Brandon Morris¹; Irene Davidova¹; ¹University of Oklahoma, Norman; ²University of Portsmouth, Portsmouth, UK
- ThP 350 **Study of Protein Pathways and Metabolic Flux of Microorganisms Involved in Biofuel Production using Proteomics/MRM Approach**; Ravi C Dwivedi^{1,2}; Tom Rydzak^{1,3}; Peter D. McQueen^{1,2}; Dmitry Shamshurin^{1,2}; Oleg V. Krokhin^{1,2}; Vic Spicer^{1,4}; Peyman Ezzati^{1,2}; Richard Sparling^{1,3}; David B Levin^{1,3}; John A. Wilkins^{1,2}; ¹University of Manitoba, Winnipeg, Canada; ²MB Centre for Proteomics and Systems Biology, Winnipeg, CANADA; ³Department of Biosystems Engineering, Winnipeg, Canada; ⁴Department of Physics & Astronomy, Winnipeg, Canada
- ThP 351 **Sugar Quantitation by Direct Analysis in Real Time Mass Spectrometry (DART-MS) for Biofuels Production**; Daudi Saang'onjo; Darrin Smith; Eastern Kentucky University, Chemistry Department, Richmond, KY

**ENVIRONMENTAL ANALYSIS: HYDROCARBONS AND DOM;
352 - 360**

- ThP 352 **Molecular Composition Space Boundaries for Fossil Oils;** Alan G. Marshall¹; Vladislav Lobodin¹; Ryan P. Rodgers¹; Amy McKenna¹; Chang Samuel Hsu^{1,2}; ¹*Ion Cyclotron Resonance Program, NHMFL, Tallahassee, FL*; ²*Future Fuels Institute, Florida State University, Tallahassee, FL*
- ThP 353 **Systematic Profiling of Organic Compounds in Oil Sands Region Waters using Complementary Liquid-Liquid Extractions and Ultrahigh-Resolution FTICR-MS;** Jun Han^{1,2}; Yi Yi^{3,4}; John J. Gibson^{3,4}; Christoph H. Borchers^{1,2}; ¹*University of Victoria-Genome BC Proteomics Centre, Victoria, BC, Canada*; ²*Department of Biochemistry & Microbiology, Victoria, BC, Canada*; ³*Alberta Innovates Technology Futures, Victoria, BC, Canada*; ⁴*Department of Geography, University of Victoria, Victoria, BC, Canada*
- ThP 354 **Catastrophe in the Gulf of Mexico: Molecular Characterization of the Deepwater Horizon Oil Spill by FT-ICR MS and Comprehensive GCxGC;** Amy McKenna¹; Ryan P. Rodgers²; Robert Nelson³; Christopher Reddy³; David Podgorski⁴; Joshua Savory⁴; Nathan Kaiser⁴; Chris Hendrickson⁴; Alan G. Marshall⁵; ¹*Natl High Magnetic Field Laboratory, Tallahassee, FL*; ²*Natl High Magnetic Field Lab, Tallahassee, FL*; ³*Woods Hole Oceanographic Institute, Woods Hole, MA*; ⁴*National High Magnetic Field Laboratory, Tallahassee, FL*; ⁵*Ion Cyclotron Resonance Prog, Tallahassee, FL*
- ThP 355 **Investigations of the Application of Membrane Introduction Mass Spectrometry (MIMS-MS) for the Environmental Analysis of Crude Oil Contamination in Water;** Morten Martinsen^{1,5}; Terese Trefjord⁵; Nicholas G. Davey^{1,2}; Christian Collin-Hansen⁴; Erik T. Krogh^{1,3}; Christopher G. Gill^{1,3}; Oyvind Mikkelsen⁵; Rudolf Schmid⁵; ¹*Appl. Env. Res. Labs.(AERL), Nanaimo, BC, Canada*; ²*University of Victoria, Victoria, BC, Canada*; ³*Vancouver Island University, Nanaimo, BC, Canada*; ⁴*Statoil ASA, Trondheim, Norway*; ⁵*NTNU, Trondheim, Norway*
- ThP 356 **A Rugged, Portable Membrane Introduction Tandem Mass Spectrometer (MIMS-MS/MS) for In-Field, On-Line Contaminant Monitoring in the Alberta Oil Sands;** Nicholas G. Davey^{2,5}; Morten Martinsen^{4,5}; Oyvind Mikkelsen⁴; Rudolf Schmid⁴; Christian Collin-Hansen³; Erik T. Krogh^{1,5}; Christopher G. Gill^{1,5}; ¹*Vancouver Island University, Nanaimo, BC, Canada*; ²*University of Victoria, Victoria, BC, Canada*; ³*Statoil ASA, Trondheim, Norway*; ⁴*NTNU, Trondheim, NO*; ⁵*Appl. Env. Res. Labs.(AERL), Nanaimo, BC, Canada*
- ThP 357 **Analysis of PAH Compounds Using LC/ Single Quadrupole MS with a Field Free APCI Source;** Avinash Dalmia; Thomas White; Daniel Pentek; *PerkinElmer, Shelton, CT*
- ThP 358 **Analysis of PAH's and Derivatives in Environments by UHPLC-fluorescence Detection/Hybrid Linear Ion Trap – Triple Quadrupole Mass Spectrometry;** Tim Hoffman¹; Rebecca Wittrig¹; Scott Kragerud¹; Robert Ellis¹; Deolinda Fernandes¹; Fouad Khalaf¹; Christopher Borton¹; Curtis Campbell²; Masatoshi Takahashi²; Jack Cochran³; Takeo Sakuma¹; ¹*AB SCIEX,*

Concord, Canada; ²*Shimadzu Scientific Instruments, Columbia, MD*; ³*Restek Corporation, Bellefonte, PA*

- ThP 359 **A Novel Approach for Visual Analysis of High Density Fourier Transform Ion Cyclotron Resonance Data of Natural Organic Matter;** Alexey Kononikhin^{1,2}; Anton Grigoryev¹; Igor Popov²; Irina Perminova³; Eugene Nikolaev^{1,2}; ¹*Institute for Energy Problems of Chemical Physics,, Moscow, Russia*; ²*Emanuel Institute of Biochemical Physics RAS, Moscow, Russia*; ³*Lomonosov Moscow State University, Moscow, Russia*
- ThP 360 **Bridging the Gap: Ultrahigh Resolution Analysis of Dissolved Organic Matter and Inorganic Trace Elements in the Ocean;** Oliver Lechtenfeld¹; Boris Koch¹; Gerhard Kattner¹; Matthias Witt²; Karsten Michelmann²; ¹*Alfred-Wegener Institute, Bremerhaven, Germany*; ²*Bruker Daltonik GmbH, Bremen, Germany*

FORENSICS: TOXICOLOGICAL ANALYSIS; 361 - 382

- ThP 361 **An Efficient Upfront CID Triple Quadrupole Mass Spectrometer with Laminar Flow Technology Improves Detection Limits and Specificity of Doping Drugs;** Borislav Starcevic¹; Dragan Vuckovic²; Ellie Majdi²; ¹*UCLA Olympic Analytical Laboratory, Los Angeles, CA*; ²*IONICS Mass Spec Group, Inc., Toronto, Canada*
- ThP 362 **Development of a High-Throughput Scheduled MRM Method for the Detection of 218 Drugs in Human Urine for Doping Control;** Paule Emilie Groleau; Gerard Dussault; *INRS-Doping control, Laval, Canada*
- ThP 363 **Nandrolone Metabolites in Urine and Doping Control Analysis: A Procedure Based on GC/C/IRMS Analysis of Both 19-norandrosterone and 19-noretiocholanolone;** Francesco Molaioni²; Francesco Botre^{1,2}; Cristiana Colamonici²; Davide Curcio²; Xavier de la Torre²; ¹*Sapienza University of Rome, Rome, Italy*; ²*Laboratorio Antidoping, FMSI, Rome, Italy*
- ThP 364 **Towards Detection of Synthetic Steroid Use in Sport Doping using GCxGC-C-IRMS Analysis of Urinary Steroids;** Herbert J. Tobias¹; Ying Zhang¹; Richard J. Auchus²; J. Thomas Brenna¹; ¹*Cornell University, Ithaca, NY*; ²*University of Texas Southwestern Medical Center, Dallas, TX*
- ThP 365 **Liquid Chromatography-Tandem Mass Spectrometry for High Throughput Screening of Sedative-Hypnotics Drugs in Urine;** Jing-Yi Huang; Ren-Jye Lee; Yu-Shan Lin; Maw-Rong Lee; *National Chung-Hsing University, Taichung, Taiwan*
- ThP 366 **Screening and Confirmation of Nimetazepam Metabolites in Urine Using LC/TOF-MS and LC/Ion Trap-MS;** Chun-Te Lee; Cheng-Hsin Teng; Sun-Chong Chuyeh; *Investigation Bureau, Ministry of Justice, Taipei, Taiwan*
- ThP 367 **Fast Drugs of Abuse Screening in Biological Fluids Dried on Paper Spots by Differential Ion Mobility Spectrometry;** Emmanuel Varesio; Michel Wagner; Chantal Grivet; Gérard Hopfgartner; *University of Geneva, University of Lausanne, Geneva, Switzerland*
- ThP 368 **Development of High Sensitivity and High Throughput LC-MS/MS-based Platform for Determination Common Drugs Abused in**

- Oral Fluid and Hair;** Yan Zin Chang; *Chung Shan Medical University, Taichung City, TAIWAN*
- ThP 369 **Simultaneous Determination of Amphetamines, Ketamine, and Opiates in Human Hair by Gas Chromatography/Mass Spectrometry Using High Pressure Microwave-Assisted Derivatization;** Hung Yin Chen; Yan Zin Chang; *Chung Shan Medical University, Taichung, Taiwan*
- ThP 370 **High Throughput Multi-Drugs Analysis by UHPLC-MS/MS with Direct Sample Injection;** Meng Han Chiang; Pin-Duo Lee; Yuan-Jhe Chang; Yan-Zin Chang; *Chung Shan Medical University, Taichung, Taiwan*
- ThP 371 **A Simple Accurate-Mass TOF-MS Method for Hallucinogen Screening in Biofluids;** Allan Xu; *NMS Labs, Willow Grove, PA*
- ThP 372 **A Forensic Assay for Body Fluid Identification by Mass Spectrometry;** Heyi Yang; Bo Zhou; Donald Siegel; Yingying Tang; Mechthild Prinz; *Office of Chief Med Exam, New York, NY*
- ThP 373 **Crash And Shoot: A Rapid LC-MS/MS Method for the Quantification of 1-Benzylpiperazine and 1-(3-Trifluoromethylphenyl) Piperazine in Human Blood and Urine;** Kerri Smith¹; Szabolcs Sofalvi²; Eric S. Lavins²; Frank P. Miller III²; Yan Xu¹; ¹*Cleveland State University, Cleveland, OH*; ²*Cuyahoga County Coroner's Office, Cleveland, OH*
- ThP 374 **Rapid Analysis of Capsaicin and Dihydrocapsaicin in Equine Plasma by UHPLC-MS/MS;** Youwen You¹; Cornelius Uboh²; Lawrence R. Soma¹; Fuyu Guan¹; Xiaoqing Li¹; Jeffrey Rudy³; Liu Ying⁴; Chen Jinwen¹; ¹*University of Pennsylvania, West Chester, PA*; ²*West Chester University, West Chester, PA*; ³*PA Equine Toxicology, West Chester, PA*
- ThP 375 **Determination of Ultra Low Concentration THC-COOH in Oral Fluid by HPLC-ESI-MS/MS;** Pin-Duo Lee; Yuan-Jhe Chang; Yan-Zin Chang; *Chung Shan Medical University, Taichung, TAIWAN*
- ThP 376 **Rapid, Quantitative, Forensic Analysis of Drug Metabolites, Adulterants and Diluents by Differential Mobility Spectrometry - Mass Spectrometry;** Adam B Hall^{1,2}; Stephen L Coy^{1,4}; Amol Kafle¹; Erkinjon Nazarov³; Paul Vourous¹; ¹*Northeastern University, Boston, MA*; ²*Boston University, Boston, MA*; ³*Draper Laboratory, Tampa, FL*; ⁴*Georgetown University, Washington, DC*
- ThP 377 **The Use of Molecular Weight Cut-off Filters to Reduce Ion Suppression in the Analysis of Cocaine in Hair;** Lindsey R Crawley¹; Roman Aranda IV¹; Kimberly Kaplan¹; Mark L Miller¹; Madeline A Montgomery²; Marc A LeBeau²; ¹*CFSRU, Federal Bureau of Investigation Laboratory, Quantico, VA*; ²*CU, Federal Bureau of Investigation Laboratory, Quantico, VA*
- ThP 378 **Determination Clobenzorex in Hair Using Hyphenated Mass Spectrometric Techniques;** Yuan-Jhe Chang; Yan-Zin Chang; *Chung Shan Medical University, Taichung, Taiwan*
- ThP 379 **Surface Sampling and Differential Ion Mobility Spectrometry for the Direct Analysis of Illicit Drug Metabolite Isomers from Tissue Sections;** Tiffany Porta¹; Thomas Kraemer²; Emmanuel Varesio¹; Gérard Hopfgartner¹; ¹*University of Geneva, Geneva, Switzerland*; ²*Institute of Legal Medicine, University of Zurich, Zurich, Switzerland*
- ThP 380 **Automated Surface Sampling of Veterinary Toxicological Samples with Analysis by Nano Electrospray Mass Spectrometry;** Jack Henion¹; Daniel Eikel¹; Yuanyuan Li¹; Joseph Ebel²; ¹*Advion BioSciences, Inc, Ithaca, NY*; ²*Cornell University, Ithaca, NY*
- ThP 381 **Applications of Liquid Chromatography-High Resolution Mass Spectrometry in Forensic Toxicology;** Jason E. Schaff; Eshwar Jagerdeo; Madeline Montgomery; Cynthia Morris-Kukoski; *FBI Laboratory Chem Unit, Quantico, VA*
- ThP 382 **Porous Gold Substrates for Rapid Extraction of Drugs Prior to MS Analysis;** Kenyon Evans-Nguyen; Tiffanie Hargraves; Amanda Quinto; Jennifer Devorak; *University of Tampa, Tampa, FL*
- INFORMATICS: WORKFLOW AND DATA MANAGEMENT; 383 - 413**
- ThP 383 **Development of a Client Tool for a Mass Spectra Database;** Satoshi Tanaka¹; Shigeki Kajihara¹; Shinichi Utsunomiya¹; Tsuyoshi Tabata²; Ken Aoshima²; Yoshiya Oda²; Yoshito Nihei^{3,4}; Takaaki Nishioka^{3,4}; Koichi Tanaka¹; ¹*Shimadzu Corporation, Kyoto, Japan*; ²*Eisai Product Creation Systems, Tsukuba, JAPAN*; ³*BIRD, JST, Tokyo, Japan*; ⁴*Keio University, Tsuruoka, Japan*
- ThP 384 **Rawputator – a New Tool to Combine Proteomic Data-Mining with Method Development, Result Validation and Quality Control;** Martin Zeller; Bernard Delanghe; Christoph Henrich; Torsten Ueckert; *Thermo Fisher Scientific (Bremen) GmbH, Bremen, Germany*
- ThP 385 **Software Profiling of Database Search Engines Results in Memory and GPU Acceleration;** Rick Weber¹; Brian Erickson¹; Rachel Adams¹; Sally Ellingson¹; Dylan Storey¹; Harry Richards¹; Robert Hettich²; ¹*SCALE-IT, University of Tennessee, Knoxville, TN*; ²*Oak Ridge National Laboratory, Oak Ridge, TN*
- ThP 386 **New Functionality for the Trans-Proteomic Pipeline: Tools for the Analysis of Proteomics Data;** Luis Mendoza¹; David Shteynberg¹; Joseph Slagel¹; Natalie Tasman²; Brian S Pratt²; Henry H. Lam³; Michael R. Hoopmann¹; Jimmy Eng⁴; Vagisha Sharma⁴; Alexey Nesvizhskii⁵; Andrew Keller¹; Eric Deutsch¹; Ruedi Aebersold⁶; Robert Moritz¹; ¹*Institute For Systems Biology, Seattle, WA*; ²*Insilicos LLC, Seattle, WA*; ³*Hong Kong University of Science and Technology, Clear Water Bay, HONG KONG*; ⁴*University of Washington, Seattle, WA*; ⁵*University of Michigan, Ann Arbor, MI*; ⁶*ETH Zurich, Zurich, Switzerland*
- ThP 387 **'Proteome Consolidator' a Tool to Build a Unified Proteome from Diverse Published Datasets in Diverse Formats;** Paul Gershon; Tuan Ngo; *UC-Irvine, Irvine, CA*
- ThP 388 **Development of a Web-based Top-Down Data Interpretation Tool;** Christian Heckendorf; Roger Theberge; Catherine E. Costello; Mark E. McComb; *Boston University School of Medicine, Boston, MA*
- ThP 389 **UniQua : A Universal and High Throughput Signal Processor for MS-Based Proteomics Approach;** Wei-Hung Chang^{1,2}; Wen-Shyoung Tzou¹; Yet-Ran Chen^{1,2}; ¹*Institute of Bioscience*

- and Biotechnology, NTOU, Keelung, Taiwan;
²ABRC, Academia Sinica, Taipei, Taiwan
- ThP 390 **Easyprot: a Graphical Pipeline for MS1/MS2 Data Processing, Protein Identification, Quantification and Unexpected Posttranslational Modification Characterization**; Florent Gluck¹; Christine Hoogland¹; Paola Antinori¹; Carla Pasquarello²; Frédéric Nikitin³; Markus Mueller³; Frédérique Lisacek³; Denis Hochstrasser^{1,4}; Alexander Scherl²; Laurent Geiser¹; ¹Swiss Centre for Applied Human Toxicology (SCAHT), Geneva, Switzerland; ²Centre Médical Universitaire, Geneva, Switzerland; ³Swiss Institute of Bioinformatics, Geneva, Switzerland; ⁴University Hospital of Geneva, Geneva, Switzerland
- ThP 391 **The ProteomeGRID Web Service for Sparse Signal Restoration and Its Extension to Raw LC/MS Data with Blind Peak Shape Estimation**; Andrew Dowsey; Guang-Zhong Yang; Hamlyn Centre, Imperial College London, London, UK
- ThP 392 **A Sparse Signal Restoration Framework for Simultaneous Baseline Estimation, Deisotoping and Charge State Deconvolution of Complex Mass Spectra**; Andrew Dowsey; Guang-Zhong Yang; Hamlyn Centre, Imperial College London, London, UK
- ThP 393 **Real-time Interpretation of Data during MS-Guided Surgical Interventions**; Julia Balog¹; Karl C Schaefer²; Tamas Szaniszlo¹; Stefanie Gerbig²; Zoltan Takats^{1,2}; ¹Semmelweis University, Budapest, Hungary; ²Justus-Liebig-University, Giessen, Germany
- ThP 394 **Data Simulation and Monte Carlo Methods for Validating Custom Isotope Dilution-MS Quantification Software**; Adrian R Woolfitt; Anne E Boyer; Maria I Solano; John R. Barr; CDC, Atlanta, GA
- ThP 395 **An Extended Bioinformatics Pipeline for the High-Throughput SRM-Like Analysis of Data Generated upon Swath MS Data Independent Acquisition**; Pedro Navarro¹; Ludovic Gillet¹; Stephen Tate²; Oliver Rinner³; Lukas Reiter³; Jie Nan¹; Ron Bonner²; Ruedi Aebersold¹; ¹IMSB - ETH, Zürich, Switzerland; ²AB SCIEX, Concord, ON; ³Biognosys AG, Zürich, Switzerland
- ThP 396 **Software Development and Application for Quantitative Proteomics using Stable Isotope Labeling**; Xin Huang¹; Miao Liu¹; Peng Hong¹; Kai Fu¹; Shi-Jian Ding^{1,2}; ¹Department of Pathology and Microbiology, UNMC, Omaha, NE; ²Mass Spectrometry Proteomics Core Facility, UNMC, Omaha, NE
- ThP 397 **Skyline: Targeted Proteomics with Extracted Ion Chromatograms from Full-Scan Mass Spectra**; Brendan Maclean¹; Amy-Joan L. Ham²; Birgit Schilling³; J. Will Thompson⁴; Arthur Moseley⁵; Bradford W. Gibson⁶; Daniel C. Liebler²; Michael J. Maccoss¹; ¹Univ of Washington, Seattle, WA; ²Vanderbilt Univ. School of Medicine, Nashville, TN; ³Buck Institute for Research on Aging, Novato, CA; ⁴Duke University School of Medicine, Durham, NC; ⁵Duke University School of Medicine, Durham, NC; ⁶Buck Inst. for Age Research, Novato, CA
- ThP 398 **OpenMS/TOPP Analysis Pipeline for Label-Free Quantitation Data**; Julia Burkhart²; Lars Nilse¹; Albert Sickmann²; René Zahedi²; Oliver Kohlbacher¹; ¹Tübingen University, Tübingen, Germany; ²Institute of Analytical Sciences, Dortmund, Germany
- ThP 399 **Full Electronic e-Raw Data Workflow for LC-MS/MS**; Ronald Schmidt; Joern Krause; Dietmar Schmidt; Sanofi Aventis Germany, Frankfurt, Germany
- ThP 400 **Robust Filtration of Data for Retention Time Alignment of Datasets using a Limited Number of Points**; Dmitry M. Avtonomov^{1,2}; Ilya A Agron²; Eugene Nikolaev^{1,2}; ¹Institute for Energy Problems of Chemical Physics, Moscow, Russian Federation; ²Institute for Bio-Chemical Physics, Moscow, Russian Federation
- ThP 401 **Integration of a Central Protein Repository into a Standard Data Processing Application for Mining Proteomics Data**; Kai Fritzsche^{1,3}; Jacob Kristensen^{1,3}; Martin Røssel Larsen²; Torsten Uecker^{1,3}; Bernard Delanghe^{1,3}; Nils Færgeman²; Julius Fredens²; Kasper Engholm-Keller²; Christian Ravnsborg^{1,3}; ¹Thermo Fisher Scientific, Odense C, Denmark; ²University of Southern Denmark, Odense, Denmark; ³Thermo Fisher Scientific, Bremen, Germany
- ThP 402 **Proteome Informatics Suite for Mass Spectrometry (PRISMS): A Cloud-Like Server for Storing, Organizing and Mining High Complexity Proteomic Datasets**; Brian Erickson¹; Rachel Adams¹; Sally Ellingson¹; Dylan Storey¹; Rick Weber¹; Harry Richards¹; Robert Hettich²; ¹SCALE-IT, University of Tennessee, Knoxville, TN; ²Oak Ridge National Laboratory, Oak Ridge, TN
- ThP 403 **Exploring Proteomics Metadata Using Spotfire and a Companion User Interface**; Roman Zenka; Mayo Clinic, Rochester, MN
- ThP 404 **Automated and Validated Bioanalytical LC-MS/MS Data Analysis**; April Pisek; Jessica White; Michael Schneider; AIT Bioscience, Indianapolis, IN
- ThP 405 **The ProteoSAFE Platform for High-Performance Discovery Proteomics**; To-Ju Huang; Claudiu Farcas; Jeremy Carver; Natalie E Castellana; Ari Frank; Sangtae Kim; Jian Wang; Xiaowen Liu; Pavel Pevzner; Vineet Bafna; Ingolf Krueger; Nuno Bandeira; University of California, San Diego, La Jolla, CA
- ThP 406 **ProHits: an Integrated Software Platform for Mass Spectrometry-Based Interaction Proteomics**; Guomin Liu¹; Jianping Zhang¹; Brett Larsen¹; Chris Stark¹; Ashton Breitkreutz¹; Zhen Yuan Lin¹; Bobby-Joe Breitkreutz¹; Yongmei Ding¹; Karen Colwill¹; Adrian Pasculescu¹; Tony Pawson¹; Jeffrey Wrana¹; Alexey Nesvizhskii²; Brian Raught³; Mike Tyers^{1,4}; Anne-Claude Gingras¹; ¹Samuel Lunenfeld Research Institute, Mount Sinai H, Toronto, Canada; ²University of Michigan, Ann Arbor, MI; ³Ontario Cancer Institute, Toronto, ON; ⁴University of Edinburgh, Edinburgh, UK
- ThP 407 **Proteomics Data Analysis using Cloud Computing**; Sung Kyu Park¹; Tao Xu¹; Ji Hyoung Lee¹; John Yates²; ¹Integrated Proteomics Applications, San Diego, CA; ²The Scripps Research Institute, La Jolla, CA
- ThP 408 **Taverna Workflows for Analysis of Mass Spectrometry Data in Proteomics**; Jeroen S. de Bruin; André M. Deelder; Magnus Palmblad;

- Leiden University Medical Center, Leiden, Netherlands
- ThP 409 **Scalable Analysis of Shotgun Proteomics Data using Cloud Enabled Trans-Proteomic Pipeline**; Joseph Slagel; Luis Mendoza; Eric Deutsch; Robert Moritz; *Institute for Systems Biology, Seattle, WA*
- ThP 410 **OpenMS/TOPP – Preprogrammed Building Blocks for the Analysis of Large-Scale Mass Spectrometry-Based Proteomics and Metabolomics Data**; Erhan Kenar¹; Sven Nahnsen¹; Lars Nilse¹; Timo Sachsenberg¹; Mathias Walzer^{1,2}; Oliver Kohlbacher¹; ¹*University of Tuebingen, Center for Bioinformatics, Tuebingen, Germany*; ²*University of Tuebingen, Department of Immunology, Tuebingen, Germany*
- ThP 411 **TOgui: A Graphical User Interface for Semi-Automatic Calculation of Proteome Wide Turnover Rates Using Stable Isotope Labeling in Living Animals**; Aaron Ruhs¹; Anne Konzer¹; Franz Cemic²; Thomas Braun¹; Marcus Krueger¹; ¹*Max-Planck-Institute for Heart and Lung Research, Bad Nauheim, Germany*; ²*FH Giessen-Friedberg, Giessen, Germany*
- ThP 412 **PDMQ: Software for the Review, Annotation and Presentation Of Quant Ratio Proteomic and Phosphoproteomic Data from Dimethyl Labeling Experiments**; Paul Gershon; *Uc-Irvine, Irvine*
- ThP 413 **A Novel Hypergeometric and Bayesian Model Allows Analysis of Mass Spectrometric Data for Comparative Surface Proteomics**; Nestor Solis; Stuart Cordwell; *The University of Sydney, Sydney, Australia*
- IMAGING MS: METHOD DEVELOPMENT – SAMPLE PREPARATION; 414 - 426**
- ThP 414 **Modified PDVF Membranes for Electroblothing Proteins for MALDI Applications**; Simona Colantonio; Christopher Wolforth; Robert Fisher; Jack Simpson; *SAIC/NCI-Frederick, Frederick, MD*
- ThP 415 **On-Tissue Protein Identification by MALDI-TOF MS Imaging and MS/MS**; Heysun Maeng^{1,2}; Jongsik Lee^{1,2}; Yangsun Kim^{1,2}; ¹*Hudson surface technology, Inc, Fort Lee, NJ*; ²*Applied surface technology, Inc, Suwon-Si, South Korea*
- ThP 416 **Stretching the Limits of Mass Spectrometry Imaging**; Kevin Tucker¹; Eric Lanni¹; Leonid Serebryanny¹; Stanislav Rubakhin²; Jonathan Sweedler¹; ¹*University of Illinois, Champaign, IL*; ²*Beckman Institute, UIUC, Urbana, IL*
- ThP 417 **A Sample Preparation Method Using Homogenously Matrix Pre-Coated Targets for MALDI Imaging of Proteins and Peptides**; Junhai Yang; Richard M. Caprioli; *Vanderbilt University, Nashville, TN*
- ThP 418 **pHPMA-based Tissue Embedding Media Fully Compatible with Mass Spectrometry Imaging Experiments**; Martin Strohalm¹; Jiri Strohalm²; Filip Kaftan³; Lukas Krasny⁴; Michael Volny¹; Petr Novak¹; Karel Ulbrich²; Vladimir Havlicek¹; ¹*Institute of Microbiology, Prague, Czech Republic*; ²*institute Of Macromolecular Chemistry, Prague, Czech Republic*; ³*institute Of Organic Chemistry And Biochemistry, Prague, Czech Republic*; ⁴*institute Of Chemical Technology, Prague, Czech Republic*
- ThP 419 **MALDI-MS Imaging and Identification of Tissue Proteins upon N-terminal Labeling with Coumarin Dyes**; Yang Xu; Maki Takahashi; Zhen Sun; Surya Nauli; Dragan Isailovic; *The University of Toledo, Toledo, OH*
- ThP 420 **Enzymatic Removal of Surface Layer on Plant Tissue Followed by Mass Spectrometric Imaging**; Ji Hyun Jun^{1,2}; Young Jin Lee^{1,2}; ¹*Ames Laboratory-US DOE, Ames, IA*; ²*Department of Chemistry, Iowa State University, Ames, IA*
- ThP 421 **An Integrated *in situ* Proteomic and Metabolomic MALDI-MS Imaging toward Multi-Omics Studies**; Ayumi Yamaguchi; Yoshinori Fujimura; Daisuke Miura; Hiroyuki Wariishi; *Kyushu University, Fukuoka, JAPAN*
- ThP 422 **Advancing the IMS Toolkit: Optimization of Matrix Application for High Spatial Resolution Drug Imaging**; Katherine A. Kellersberger¹; Shannon Cornett¹; Mark R. Groseclose²; David S. Wagner²; Stephen Castellino²; ¹*Bruker Daltonics, Inc., Billerica, MA*; ²*GlaxoSmithKline, Durham, NC*
- ThP 423 **Detection of PAHs in Seafood Using MALDI Imaging**; Venkatesulu Salla; Kermit K. Murray; *Louisiana State University, Baton Rouge, LA*
- ThP 424 **Plant Imprint Imaging Using Desorption Electrospray Ionization Mass Spectrometry (DESI-MS)**; Sheran Oradu¹; Demian R. Ifa¹; Zheng Ouyang¹; R. Graham Cooks¹; Bernhard Kraeutler²; Thomas Mueller²; ¹*Purdue University, West Lafayette, IN*; ²*University of Innsbruck, Innsbruck, Austria*
- ThP 425 **Sample Preparation: the Key to Success for MALDI-MSI**; Julien Franck¹; Céline Meriaux¹; Maxence Wisztorski¹; Rémi Longuespée¹; Liam McDonnell⁴; Gérard Bolbach³; Isabelle Fournier^{1,2}; Michel Salzet^{1,2}; ¹*FABMS, Université Lille 1, Villeneuve D'Ascq, France*; ²*Imabiotech, Villeneuve D'Ascq, France*; ³*LBM, Université Paris 6, Paris, France*; ⁴*Leiden University Medical Center, Leiden, Netherlands*
- ThP 426 **Quantitative MALDI Tandem Mass Spectrometric Imaging of Cocaine from Brain Tissue with a Deuterated Internal Standard**; David A. Pirman¹; Andras Kiss²; Ron M.A. Heeren²; Richard A. Yost¹; ¹*University of Florida, Gainesville, FL*; ²*FOM Institute for Atomic and Molecular Physics, Amsterdam, Netherlands*
- IMAGING MS: METHOD DEVELOPMENT – NEW METHODS; 427 - 445**
- ThP 427 **Lipid Distribution in Mammalian Brain Cerebellum using MALDI-LTQ: Structural Analysis and Localization**; Benoit Colsch; Shelley N Jackson; Amina S. Woods; *NIDA-IRP, NIH, Baltimore, MD*
- ThP 428 **Maximum Information Extraction From Mass Spectrometry Imaging Data Using Multivariate Analysis**; Judith Fonville¹; Claire Carter²; Josephine Bunch²; Jeremy Nicholson¹; Elizabeth J Want¹; John Lindon¹; Elaine Holmes¹; ¹*Imperial College London, London, UK*; ²*University of Birmingham, Birmingham, UK*
- ThP 429 **Development of Reference Standards for Assessing Quantitative Capabilities of MALDI-MS Imaging**; Sarah Turker; Josephine Bunch; *University of Birmingham, Birmingham, UK*
- ThP 430 **Spatial Proteomics: A combined Imaging & LC-MS/MS Workflow providing Protein Distributions in Tissue and their Identities**; Michael Becker; Martin Schürenberg; Christine

- ThP 431 Luebbert; Rainer Paape; Detlev Suckau; *Bruker Daltonik GmbH, Bremen, Germany*
Spatial Sharpening of Ion Expression in Tissue through Data Fusion between Imaging Mass Spectrometry and Microscopy; Raf Van de Plas; Junhai Yang; Richard M. Caprioli; *Vanderbilt University, Nashville, TN*
- ThP 432 **High Resolution 10 μ m MALDI- Imaging Mass Spectrometry of Rodent Optic Nerve Tissue**; David Anderson; Daniel Mills; Jeffery Spraggins; Wendi Lambert; David Calkins; Kevin Schey; *Vanderbilt University, Nashville, TN*
- ThP 433 **Ultrashort Pulse Laser Ablation for Depth Profiling of Bovine Eye Lens Tissue**; Slobodan Milasinovic; Melvin Blaze M.T.; Yaoming Liu; Robert J. Gordon; Luke Hanley; *University of Illinois at Chicago, Chicago, IL*
- ThP 434 **Matrix-Free Laser Desorption Ionisation MS Imaging using FT-ICR Mass Spectrometry**; Sophie Thurlow¹; Richard J Goodwin²; David Harrison³; Pat Langridge-Smith¹; C. Logan Mackay¹; ¹SIRCAMS, School of Chemistry, Edinburgh University, Edinburgh, UK; ²Glasgow University, Glasgow, UK; ³Division of Pathology, Edinburgh University, Edinburgh, UK
- ThP 435 **Developing A Sample Preparation Technique for MALDI Mass Spectrometry Imaging of Ultra-Thin Kidney Tissue Samples**; Martina Marchetti-Deschmann¹; Sophie Froehlich¹; Helga Schachner²; Omar Belgacem³; Alan Barnes³; Dentscho Kerjaschki²; Guenter Allmaier¹; ¹Vienna University of Technology, Vienna, AUSTRIA; ²Medical University of Vienna, Vienna, Austria; ³Shimadzu Biotech Kratos Analytical, Manchester, UK
- ThP 436 **Mapping Small Drug Molecules in Mouse Tissue**; Hui Tao; Yoryu Chen; weige Qin; Carl Campos; Ingo Mellinghoff; Nian wu; *Memorial Sloan-Kettering Cancer Center, New York, NY*
- ThP 437 **Tissue Imaging using Laserspray Ionization at Ultra-high Mass Resolution on an Orbitrap Exactive Mass Spectrometer**; Andrew Harron; Vincent Pagnotti; Charles N. McEwen; *University of Sciences, Philadelphia, PA*
- ThP 438 **High Throughput MRM Detection of Endogenous Metabolites in Tissues Using Imaging Mass Spectrometry**; Jamie L. Allen; Michelle L. Reyzer; Richard M. Caprioli; *Vanderbilt University, Nashville, TN*
- ThP 439 **Advancing Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry Imaging (MALDI-MSI) for Capillary Electrophoresis (CE) Analysis of Peptides**; Hui Ye¹; Junhua Wang²; Zichuan Zhang¹; Gary Girdaukas¹; Lingjun Li¹; ¹SOP University of Wisconsin, Madison, WI; ²The Scripps Research Institute, La Jolla, CA
- ThP 440 **Towards Visualizing the Spatial Expression of Matrix Metalloproteinases (MMPs) Activity during the Foreign Body Response using MALDI Imaging MS**; Sasirekha Muruganantham; Rohana Liyanage; Jackson O Lay Jr; Julie A Stenken; *University of Arkansas, Fayetteville, AR*
- ThP 441 **Direct Matrix-Assisted Laser Desorption/Ionization Mass Spectrometric Imaging of Lignocellulosic Tissue**; Kyle Lunsford; Gary Peter; Richard Yost; *University of Florida, Gainesville, FL*
- ThP 442 **High-resolution TOF-SIMS Imaging and Sequential Immunofluorescent Analysis of Multi-Layered Barrier Structure of the Mouse Skin Stratum Corneum**; Akiharu Kubo^{1, 2}; Itsuko Ishizaki³; Akiko Kubo⁴; Hiroshi Kawasaki²; Yoshiharu Ohashi³; Masayuki Amagai²; ¹Center for Integrated Medical Research, Keio Univ, Tokyo, Japan; ²Department of Dermatology, Keio Univ, Tokyo, Japan; ³ULVAC-PHI, Chigasaki, Japan; ⁴Department of Biochemistry, Keio Univ, Tokyo, Japan
- ThP 443 **Imaging of Tumor Samples with Desorption Electrospray Ionization (DESI)**; Stefanie Gerbig¹; Ottmar Golf¹; Julia Balog²; Karl-Christian Schaefer¹; Tamas Szaniszló²; Zoltan Takats¹; ¹Justus-Liebig-University, Giessen, Germany; ²Semmelweis University, Budapest, Hungary
- ThP 444 **Multiplex Multivariate Agreement Analysis for Confident Imaging Mass Spectrometry-Based Molecular Histology**; Emrys Jones¹; Alexandra Van Remoortere¹; René van Zeijl¹; Pancras Hogendoorn²; André Deelder¹; Liam McDonnell¹; ¹Parasitology, Leiden University Medical Center, Leiden, the Netherlands; ²Pathology, Leiden University Medical Center, Leiden, the Netherlands
- ThP 445 **Sub-Micrometer Spatial Resolution EUV-Laser-Ablation Imaging Mass Spectrometry**; Jorge Filevich^{1, 2}; Ilya Kuznetsov^{1, 2}; Feng Dong^{1, 3}; Bryce Schroeder^{1, 4}; Elliot R. Bernstein^{1, 3}; Dean C. Crick⁵; Michael Michael McNeil⁵; Weilun Chao⁷; Erik H. Anderson⁷; Yanwei Liu^{1, 6}; Anne Sakdinawat^{1, 6}; David T. Attwood^{1, 6}; Jorge J. Rocca^{1, 2}; Carmen Menoni^{1, 2}; ¹NSF Center for EUV Science and Technology, Fort Collins, CO; ²Dept. of Electrical & Computer Engineering, CSU, Fort Collins, CO; ³Department of Chemistry, CSU, Fort Collins, CO; ⁴School of Biomedical Engineering, CSU, Fort Collins, CO; ⁵Dept. Microbiology, Immunology and Pathology, CSU, Fort Collins, CO; ⁶EECS Dept., University of California, Berkeley, CA; ⁷Center for x-ray optics, LBNL, Berkeley, CA

PEPTIDES: ION ACTIVATION/DISSOCIATION; 446 - 457

- ThP 446 **Characterization of Conjugation Site of Polymer Attached Peptides Using Electron Transfer Dissociation**; Chul Yoo; Aleksander Swietlow; Kevin Turney; Michal Achmatowicz; *Amgen, Inc., Thousand Oaks, CA*
- ThP 447 **EXD Approaches for Characterization of Lasso Peptides**; Carlos Afonso^{1, 2}; Marie Pérot^{1, 2}; Severine Zirah²; Quentin Enjalbert³; Rodolphe Antoine³; Jerome Lemoine³; Philippe Dugourd³; Sylvie Rebuffat²; Jean-Claude Tabet¹; ¹Université Paris 6/UMR7201, Paris, France; ²National Museum of Natural History / CNRS, Paris, France; ³LASIM CNRS Université Lyon 1, Villeurbanne, France
- ThP 448 **Development and Evaluation of Atmospheric-Pressure Electron Capture Dissociation (AP-ECD) for the LC/MS Analysis of Protein Digests**; Damon Robb; Davin Carter; Jason Rogalski; Juergen Kast; Michael Blades; *University of British Columbia, Vancouver, Canada*
- ThP 449 **Effective Temperature and Matrix Effect of In- and Post-Source Decays of Peptide Ions in MALDI TOF Mass Spectrometry: Expansion Cooling**; So Hee Yoon^{1, 3}; Jeong Hee Moon²; Myung Soo Kim¹; ¹Seoul National University, Seoul, Korea; ²KRIBB, Daejeon, South Korea; ³KRIS, Daejeon, Korea

- ThP 450 **Radical Directed Dissociation of Peptide Anions**; Qingyu Sun; Tony Ly; Gene Yoo; Julie Hsu; Ryan R. Julian; *University of California, Riverside, Riverside, CA*
- ThP 451 **Ultraviolet Photodissociation of Guanidinated Lys-N Peptides for *de novo* Sequencing**; Michelle Robinson; James Madsen; Jennifer Brodbelt; *University of Texas at Austin, Austin, TX*
- ThP 452 **Modification of Triple Quadrupole Linear Ion Trap Mass Spectrometer for Laser-induced Dissociation on Cationic Peptides**; Dominic Chun Ming Ng; Cheuk Kuen Lai; Ringo Hon Fung Pang; Allan Shi Chung Cheung; Ivan Keung Chu; *The University of Hong Kong, Hongkong*
- ThP 453 **Mass Spectrometry Analysis of 2-Nitrophenylhydrazine Carboxy Derivatized Peptides**; Junmei Zhang; Rowaida Al-Eryani; Haydn Ball; *University of Texas Southwestern Medical Center, Dallas, TX*
- ThP 454 **Increased Coverage in Global Proteomics Survey Experiments Using Higher Energy Collision Induced Dissociation on a Linear Ion Trap Mass Spectrometer**; August A. Specht; Julie A. Horner; Roger G. Biringer; Philip M Remes; *Thermo Fisher Scientific, San Jose, CA*
- ThP 455 **High Energy Collision Induced Dissociation in Digital Linear Ion Trap Mass Analyzer**; Gong-Yu Jiang; Xiao-Hui Yang; Tao Lin; Hui Mu; Li Ding; *Shimadzu Research Laboratory(Shanghai) Co.,Ltd., Shanghai, China*
- ThP 456 **Disulfide Assignments in Peptides by Mass Spectrometry: Fragmentation of the Intact Molecule**; Kallol Gupta¹; Mukesh Kumar²; Moitrayee Bhattacharyya¹; K. H. Gowd¹; P. Balaram¹; ¹*Indian Institute of Science, Bangalore, India*; ²*National Center for Biological Sciences, Bangalore, India*
- ThP 457 **The Combination Behavior of Bradykinin with I(A) Ions by ESI Q-ToF MS**; Dan Jiang; Ling Pu; YanQiu Chu; ChuanFan Ding; *Department of Chemistry, Fudan University, Shanghai, China*
- PEPTIDES: QUANTITATIVE ANALYSIS: LABEL FREE II; 458 - 476**
- ThP 458 **High Resolution FT-ICR Tandem Mass Spectrometry Strategy for a Label-Free Quantitation Approach to Study Cell Lysates**; Paddy Lavery¹; Mark Bennett²; Stefan Weidt³; Perdita Barran⁴; C. Logan Mackay³; Pat Langridge-Smith³; ¹*Nonlinear Dynamics Ltd, Newcastle Upon Tyne, NE1 2JE, UK*; ²*Nonlinear USA Inc., Durham, NC*; ³*SIRCAMs, School of Chemistry, Edinburgh University, Edinburgh, UK*; ⁴*School of Chemistry, Edinburgh University, Edinburgh, UK*
- ThP 459 **PTM Characterization and Relative Quantitation of Protein Tau from Mouse Models**; Alexandra Ioanoviciu; Meaghan Morris²; Shenheng Guan¹; Sumihiro Maeda²; Lennart Mucke²; A.L. Burlingame¹; ¹*University of California, San Francisco, CA*; ²*Gladstone Institute of Neurological Disease, San Francisco, CA*
- ThP 460 **Global Absolute Protein Quantification of *Bacillus subtilis***; Jan Muntel¹; Vincent Fromion²; Michael Hecker¹; Dörte Becher¹; ¹*University Greifswald, Greifswald, Germany*; ²*INRA, Jouy-en-Josas, France*
- ThP 461 **A Systemic Approach to Address and Resolve Issues Involved in Peptide Quantitation**; David Ho¹; Kojo Abdul-Hadi¹; Randal Eckert²; Lily Li¹; ¹*TandemLabs, Labcorp Company, Woburn, MA*; ²*C3 Jian Inc., Inglewood, CA*
- ThP 462 **Exploring the Utility of High Resolution MRM Analysis on Complex Proteomes**; Kathleen Lewis-Torpey¹; Christie Hunter¹; Paola Picotti²; ¹*AB Sciex, Foster City, CA*; ²*Institute of Biochemistry IBC, ETH Zurich, Zurich, Switzerland*
- ThP 463 **Quantitative Profiling of Glycan-related Genes in Mouse Embryonic Stem Cell Differentiation**; Xiang Zhu; Matt Bechard; Stephen Dalton; Ron Orlando; *University of Georgia, Athens, GA*
- ThP 464 **Performance Evaluation of a Label-Free Quantitative Chemical Proteomics Assay**; Zhixiang Wu; Fiona Pacht; Bernhard Kuster; *Technische Universität München, Freising, Germany*
- ThP 465 **Performance Assessment of MRM, MSe and Spectral Counting Platforms using a Custom Set of Quantitative Standards Prepared in a Background Matrix**; James J Walters; Gordon R. Nicol; Jeffrey L Turner; Melissa Radabaugh; Michael Jennings; Kevin Ray; *Sigma-Aldrich, St Louis, MO*
- ThP 466 **Quality Control of Nano-LC-MS Systems using Stable Isotope-Coded Peptides**; Julia Maria Burkhardt; Thomas Premisler; Albert Sickmann; *ISAS Dortmund, Germany*
- ThP 467 **Development of a Quantitative LC-MS/MS Assay for Alzheimer's Disease Serum Protein Biomarkers without Using Protein Standards**; Bob Xiong; Kojo Abdul-Hadi; Lily Li; *Tandem Labs, Woburn, MA*
- ThP 468 **CYP Induction Measured by Enzyme Activity and Protein Quantitation – the Case of Xenobiotics That Both Induce and Inhibit**; Brian Williamson¹; Jonathan Jackson²; Steve Ferguson²; ¹*ABSciex, Framingham, MA*; ²*Life Technologies, Durham, NC*
- ThP 469 **Determination of Polypeptides and Other Large Molecular Weight Molecules by LC/MS/MS**; Geneviève Émond; Nadia Savard; Simon Bédard; Philippe Bélanger; Nancy Lampron; Nathalie Pelletier; Marie-Josée Marcoux; Sylvain Lachance; Nadine Boudreau; Ann Lévesque; *PharmaNet Canada, Québec, Canada*
- ThP 470 **Sensitive and High-Throughput Bioanalysis of Octreotide Using LC-MS/MS**; Yao Shi; Laixin Wang; Bradley Bessette; Spencer Carter; Scott Reuschel; Min Meng; *Tandem Labs, Salt Lake City, UT*
- ThP 471 **Quantitative Analysis of Proteins in Plasma Using Differential Mobility Spectrometry and Multiple Reaction Monitoring With NanoLC and CapillaryLC**; Jay J. Corr¹; Hasmik Keshishian²; Susan E. Abbatiello²; Thomas R. Covey¹; ¹*AB SCIEX, Concord, Canada*; ²*Broad Institute of MIT and Harvard, Cambridge, MA*
- ThP 472 **Improving Intact Peptide Quantitation by Combining Chemical Effect with Differential Mobility Separation and Mass Spectrometry (DMS-MS)**; J. Larry Campbell; J.C. Yves Leblanc; *AB SCIEX, Concord, On, CANADA*
- ThP 473 **Application of Differential Mobility Ion Spectrometry with Modifiers for Selectivity Enhancement: Analysis of Ghrelin and Desacyl-Ghrelin in Plasma by LC-MS**; Jonathan

- ThP 474 Sidibé; Emmanuel Varesio; Gerard Hopfgartner; *University of Geneva, Geneva 4, SWITZERLAND*
Quantification of Peptides and Proteins by Spectrofluorimetric Detection of Native Fluorescence and Mass Spectrometry; Suraj Saraswat; Bruce Snyder; Dragan Isailovic; *University of Toledo, Toledo, OH*
- ThP 475 **Using Thermal Gradient Focusing Electrospray Ionization to Develop Sensitive, High-Throughput Capillary Flow LC/MS/MS Peptide Quantitation Assays**; Craig Love; Christine A. Miller; Alex Mordehai; *Agilent Technologies, Santa Clara, CA*
- ThP 476 **Evaluation of High Speed Mass Spectrometry Approaches to Detect and Quantify Expressed Proteins Derived from Stem Cells**; Jesse Hines¹; Jeremy Praissman¹; Caroline Watson¹; Michael Pierce^{1,2}; Joshua Sharp¹; Lance Wells^{1,2}; Ron Orlando^{1,2}; ¹*Complex Carbohydrate Research Center UGA, Athens, GA*; ²*Dept. of Biochemistry & Molecular Biology UGA, Athens, GA*
- PEPTIDES: PTM IDENTIFICATION III; 477 - 504**
- ThP 477 **Challenges in Identification of an N-terminal Isoaspartic Acid Residue**; Nadezda P. Sargaeva¹; Cheng Lin¹; Peter B. O'Connor^{1,2}; ¹*Boston University, Boston, MA*; ²*University of Warwick, Coventry, UK*
- ThP 478 **A Hypothesis-Driven Proteomics Approach to Profile Isoaspartyl Residues in Urinary Proteins in Wild Type or Protein L-Isoaspartyl O-Methyltransferase-Deficient Mice**; Wenqin Ni¹; Shujia Dai¹; Alexander N. Patananan²; Steven G. Clarke²; Barry L. Karger¹; Zhaozhui Sunny Zhou¹; ¹*Barnett Institute, Northeastern University, Boston, MA*; ²*Department of Chemistry & Biochemistry, UCLA, Los Angeles, CA*
- ThP 479 **Quantitative Determination of the Relative Concentration of isoAsp Residues in Peptides in Binary Mixtures. Optimal Instrumentation Parameters**; Igor Popov^{1,2}; Maria I. Indeykina^{1,2}; Alexey Kononikhin^{1,2}; Oleg Kharybin³; Sergey Kozin³; Alexey Boldyrev^{1,4}; Eugene Nikolaev^{1,2}; ¹*Institute for Energy Problems of Chemical Physics, Moscow, Russia*; ²*Emanuel Institute of Biochemical Physics RAS, Moscow, Russia*; ³*Orekhovich Institute of Biomedical Chemistry RAMS, Moscow, Russia*; ⁴*Moscow Institute of Physics and Technology, Moscow, Russia*
- ThP 480 **Deamidation of Collagen**; Pilar Perez Hurtado; Peter B. O'Connor; *University of Warwick, Coventry, UK*
- ThP 481 **Bottom-Up Disulfide Mapping using Electron Transfer Dissociation**; Daniel Clark; Eden Go; Heather Desaire; *University of Kansas, Lawrence, KS*
- ThP 482 **Disulfide Mapping of Invariant Cysteines in nCLCA Domain of CLCA Proteins**; Ilan Vidavsky; Tom J. Brett; Michael L. Gross; *Washington University, St Louis, MO*
- ThP 483 **Polycomb Repressive Complex 2 is Necessary for Normal O-GlcNAc Transferase Function in Embryonic Stem Cells**; Samuel Myers; Barbara Panning; A.L. Burlingame; *University of California, San Francisco, CA*
- ThP 484 **Strategy for Extensive Site-specific Glycosylation Analysis in Protein Mixtures**; Charles Nwosu¹; Richard Seipert¹; John Strum¹; Serenus Hua²; Hyun Joo An¹; Angela Zivkovic²; Bruce German²; Carlito Lebrilla¹; ¹*University of California, Davis, Chemistry Dept., Davis, CA*; ²*University of California, Davis, Food Science Dept, Davis, CA*
- ThP 485 **High Resolution LC/MS-based Background Subtraction for Post-Translational Modifications: Application to Characterization of Nonenzymatic Glycation of Human Myoglobin**; Haiping Zhang¹; Wei Wu²; Li Tao³; Griff Humphreys⁴; Reb J. Russell⁴; ¹*Bristol-Myers Squibb R&D, Pennington, NJ*; ²*Bristol-Myers Squibb Company, Pennington, NJ*; ³*Bristol-Myers Squibb Co., Pennington, NJ*; ⁴*Bristol Myers Squibb, Princeton, NJ*
- ThP 486 **Characterization of Glycation in a Monoclonal Antibody by Electron Transfer Dissociation Mass Spectrometry**; Jinhua (Jenny) Feng; Kenneth Moore; Deepti Sharma; Johnson Varghese; Patricia Cash; *MedImmune, Gaithersburg, MD*
- ThP 487 **A Strategy for Complete Protein Characterization by Mass Spectrometry of the C-terminal MUC2**; Sjoerd Van Der Post; Kristina Thomsson; Gunnar Hansson; *University of Gothenburg, Gothenburg, Sweden*
- ThP 488 **Evaluation of Nonreductive β -Elimination / Michael-Addition for Glycosylation Site Determination of Mucin-like O-glycosylated Peptides**; Bernhard Halfinger; Bettina Sarg; Leopold Kremser; Herbert H. Lindner; *Biocenter, Division of Clinical Biochemistry, Innsbruck, Austria*
- ThP 489 **Localization of O-Glycosylation Sites in Glycopeptides by In-Source Decay Experiment with 15T FT-ICR MS**; Sang Beom Lee^{1,3}; Yong-Moon Lee³; Yeongran Jeong²; Ji-hye Cheon²; Kyu Hwan Park¹; Hyun Sik Kim¹; ¹*Korea Basic Science Institute, Cheongwon-Gun, South Korea*; ²*LG Life Sciences, Ltd., Daejeon, South Korea*; ³*Chungbuk National University, Chungju, Chungcheongbuk-do, South Korea*
- ThP 490 **Fragmentation of AMPylated Peptides: Characteristic Ions and their Relative Peak Intensity at Varied Collision Energy**; Yan Li; Rowaida Al-Eryani; Melanie L. Yarbrough; Kim Orth; Haydn L. Ball; *University of Texas Southwestern Medical Center, Dallas, TX*
- ThP 491 **Atmospheric Pressure Photoionization of Palmitoylated Peptides**; Aicha Bagag¹; Alexandre Giuliani^{2,3}; Matthieu Réfrégiers³; François Le Naour¹; ¹*INSERM U785, Villejuif, France*; ²*Cepia, INRA, Nantes, France*; ³*DISCO Beamline, SOLEIL Synchrotron, L'Orme des Merisiers, France*
- ThP 492 **Modification of Cysteine Residues of Proteins and Peptides in the Presence of Dehydroascorbate**; Phyla Kay; J. Richard Wagner; Klaus Klarskov; *Université de Sherbrooke, Sherbrooke, QC*
- ThP 493 **Identification and Characterization of 4-HNE-Modified Liver Fatty Acid Binding Protein in a Rodent Model of Alcoholic Liver Disease**; Rebecca Smathers; Kristofer Fritz; James Galligan; Colin Shearn; Dennis Petersen; *University of Colorado Denver, Aurora, CO*
- ThP 494 **FT-ICR-MS Characterization of Transient Post-Translational Modifications on the Lovastatin Nonaketide and Fredericamycin**

- Synthases;** Michael Meehan¹; Ping-Hui Szu²; Sridhar Govindarajan³; Abhirup Das²; Wei Xu⁴; Don Nguyen¹; Jeremy Minshull³; Yi Tang⁴; Chaitan Khosla²; Pieter Dorrestein¹; ¹University of California, San Diego, San Diego, CA; ²Stanford University, Stanford, CA; ³DNA 2.0, Menlo Park, CA; ⁴University of California, Los Angeles, Los Angeles, CA
- ThP 495 **Mass Spectrometry Study of Protein/Peptide Palmitoylation;** Yuhuan Ji¹; Dagmar J. F. Haeussler²; Joseph Burgoyne²; Sandrine E. Voillard Bourgoignie¹; Richard A. Cohen²; Catherine E. Costello¹; Markus M. Bachschmid²; Cheng Lin¹; ¹Dept of Biochem, Boston Univ School of Medicine, Boston, MA; ²Dept of Medicine, Boston Univ School of Medicine, Boston, MA
- ThP 496 **Localization of the Specific Site of CpeS Enzyme-Mediated Covalent Binding of Phycoerythrobilin (PEB) to the C-Phycoerythrin Beta Subunit;** M. Nazim Boutaghou; Avijit Biswas; Wendy M. Schluchter; Richard B. Cole; University of New Orleans, New Orleans, LA
- ThP 497 **HPLC-ESI-MS/MS Analysis of Farnesylated peptides;** Marina Wotske; Dirk Wolters; Ruhr-University of Bochum, Bochum, Germany
- ThP 498 **A Turn-Key Approach for Large-Scale Identification of SUMOylated Peptides from Tandem Mass Spectra;** Jian Wang¹; Boumediene Soufi²; Jeff Knott³; John Rush³; Jennie Lill²; Philip Bourne⁴; Nuno Bandeira^{4,5}; ¹Bioinformatics Program, UCSD, La Jolla, CA; ²Genentech Inc, South San Francisco, CA; ³Cell Signaling Technologies, Danvers, MA; ⁴Skaggs School of Pharmacy, UCSD, La Jolla, CA; ⁵CCMS, UCSD, La Jolla, CA
- ThP 499 **Interplay between Protein Ubiquitylation and SUMOylation in Human Cells Unveiled Using a Novel Proteomics Approach;** Chantal Durette¹; Louiza Mahrrouche¹; Frederic Galisson²; Mathieu Courcelles¹; Eric Bonneil¹; Mounira K. Chelbi-Alix³; Pierre Thibault^{1,4}; ¹IRIC / Université de Montréal, Montréal, Canada; ²CNRS UMR 5086, Lyon, France; ³CNRS FRE 3235, Université Paris Descartes, Paris, France; ⁴Department of Biochemistry, Université de Montréal, Montréal, Canada
- ThP 500 **Methods for Characterizing Protein Ubiquitination in Whole Cell Lysates;** Namrata Udeshi; Thomas Eisenhaure; Nir Hacohen; Steven A. Carr; The Broad Institute, Cambridge, MA
- ThP 501 **Characterizing cIAP Mediated Ubiquitination by Quantitative Mass Spectrometry;** Anita Izrael-Tomasevic; Lilian Phu; Anna Fedorova; Kurt Deshayes; David Arnott; Domagoj Vucic; Donald S. Kirkpatrick; Genentech, Inc., South San Francisco, CA
- ThP 502 **Developing a Method for the Analysis of Ubiquitinated Proteins;** Katherine L. Fiedler; Robert J. Cotter; Johns Hopkins University School of Medicine, Baltimore, MD
- ThP 503 **Antibody and MS-based Methods for Identifying SUMO-1 Modified Peptides;** Omoruyi Osula^{1,2}; Caelin Potts³; Michael Matunis³; Robert J. Cotter^{1,2}; ¹Johns Hopkins School of Medicine, Baltimore, MD; ²Middle Atlantic MS Laboratory, Baltimore, MD; ³Johns Hopkins School of Public Health, Baltimore, MD
- ThP 504 **Characterization of Protein Thioredoxin Incorporated with the Unnatural Amino Acid β -hydroxynorvaline by *Escherichia coli* Threonyl-tRNA Synthetase;** Anand Minajigi; Bin Deng; Christopher Fracklyn; University of Vermont, Burlington, VT
- PHOSPHOPEPTIDES: QUANTITATIVE ANALYSIS; 505 - 528**
- ThP 505 **Identification of Compensatory Phosphorylation and Interactors of Checkpoint Kinase Rad53 Responding to Defective Dun1 Activation in Normal S phase;** Eric S.-W. Chen^{1,2}; Ming-Daw Tsai^{1,2}; ¹Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan; ²Institute of Biochemical Science Taiwan University, Taipei, Taiwan
- ThP 506 **Profiling Strategy for Relative Quantification of Phosphoproteome from Tissue Extracts: Method Validation and Application to a Cardiovascular Disease Model System;** Aruna B. Wijeratne¹; Janet Bodmer²; Wendy D. Haffey¹; Hongjun Shu¹; Jo El J. Schultz²; Kenneth D. Greis¹; ¹The Department of Cancer & Cell Biology, University of Cincinnati, Cincinnati, OH; ²The Department of Pharmacology & Cell Biophysics, University of Cincinnati, Cincinnati, OH
- ThP 507 **Label-free Phosphoproteomics Method to Investigate Signaling Pathways Downstream of Novel PI3K/mTOR Inhibitors in Cancer Cells;** Pedro Casado-Izquierdo¹; Juan Carlos Rodriguez-Prados¹; Sabina Cosulich²; Sylvie Guichard²; Bart Vanhaesebroeck¹; Pedro Cutillas¹; ¹Barts Cancer Institute, London, UK; ²AstraZeneca, Macclesfield, UK
- ThP 508 **Quantitative Phosphoproteomics for Global Profiling of Kinase Activity: a Mass Spectrometry-Based Activitomic Approach to Cell Signaling;** Luisa Beltran; Pedro Cutillas; Barts Cancer Institute, QMUL, London, UK
- ThP 509 **Quantitation of Phosphorylation Levels in the TLR Signaling Pathway in Mouse Macrophages using iTRAQ;** Virginie Sjoelund; Aleksandra Nita-Lazar; NIH/NIAID/PSIIM, Bethesda, MD
- ThP 510 **A high-Throughput, in vitro, Multiplexed Kinase Activity Assay with a Benchtop Orbitrap Mass Spectrometer;** Ryan Kunz; Harvard Medical School, Boston, MA
- ThP 511 **An Assessment of Three Quantitative Phosphoproteomic Strategies to Study Receptor Tyrosine Kinase Signaling;** Guoan Zhang; Thomas Neubert; Skirball Institute, NYUMC, New York, NY
- ThP 512 **Developing a Mass Spectrometry-based Workflow to Quantify Plasma Phosphopeptides;** Anna M. Zawadzka¹; Jason Held¹; Birgit Schilling¹; Penelope M. Drake²; Susan J. Fisher²; Bradford W. Gibson¹; ¹Buck Institute for Research on Aging, Novato, CA; ²University of California San Francisco, San Francisco, CA
- ThP 513 **Quantitative Phosphoproteomic Analysis of Cell Defense using Stable Isotope-Coded ERLIC/IMAC Combined with LC/MS/MS and LC/MS^E;** Ko-Yi Chien; John Williamson; Michael Goshe; NC State University, Raleigh, NC
- ThP 514 **Quantitative Phosphoproteome Analysis of Normal vs. Pim-1 Kinase Expression-Modified Mouse Prostate Cells;** Wayne Chou; Tuan Ngo; Michael Lilly; Paul Gershon; UC-Irvine, Irvine, CA

- ThP 515 **Quantitative Proteome Analysis of Trichomonas Vaginalis in Response to Iron-Inducible Signal Transduction;** Fu-An Li; Hong-Ming Hsu; Jung-Hsiang Tai; *Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan*
- ThP 516 **Quantitative Phosphoproteomics and RNAi Experiments using FAIMS-LC-MS/MS Unveil Unexpected CK2 Targets in Insulin Signaling Pathway;** Gaëlle Bridon; Eric Bonneil; Olivier Caron-Lizotte; Pierre Thibault; *Univ. of Montreal, Montréal, Canada*
- ThP 517 **Application of an Experimentally Flexible Label-Free Quantitative Phosphoproteomic Strategy to Characterize Signaling Pathways within Human Red Blood Cell Membranes;** Erik J. Soderblom¹; Rahima Zennadi²; Erin J. Whalen³; Susan C. Alexander²; Laura G. Dubois¹; J. Will Thompson¹; Marilyn J. Telen²; M. Arthur Moseley¹; ¹Duke University School of Medicine, Durham, NC; ²Division of Hematology Duke Univ. Medical Center, Durham, NC; ³Division of Cardiology Duke Univ. Medical Center, Durham, NC
- ThP 518 **Statistical Analysis of the Phosphoproteome Applied to Signalling Pathways Affected by Dioxin Treatment;** Melanie Schulz¹; Veit Schwaemmle¹; Ulrich Andrae²; Martin R. Larsen¹; ¹University of Southern Denmark, Odense, Denmark; ²Helmholtz Zentrum Muenchen, Neuherberg, Germany
- ThP 519 **Multiplexed Quantification of Signaling in Yeast as Induced by Osmotic Stress;** Anna E. Larson; M. Violet Lee; Michael S. Westphall; Audrey P. Gasch; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- ThP 520 **A Label-free MALDI-Mass Spectrometric Phosphopeptide Quantitation Method without DHB Addition During TiO₂-dependent Enrichment;** Thomas Eickner; Claudia Röwer; Stefan Mikkat; Michael O. Glocker; *Proteome Center Rostock, Rostock, Germany*
- ThP 521 **TSNP Signaling Network Revealed by Quantitative Phosphoproteomics;** Jun Zhong¹; Min-Sik Kim¹; Raghothama Chaerkady¹; Shyam Palapetta²; Jyoti Sharma²; Albrecht Moritz³; John Rush³; Akinori Yoda⁴; David Weinstock⁴; Akhilesh Pandey¹; ¹Johns Hopkins University, Baltimore, MD; ²Institute of Bioinformatics, Bangalore, India; ³Cell Signaling Technology, Danvers, MA; ⁴Harvard Medical School, Boston, MA
- ThP 522 **Deciphering Nod Factor Signal Transduction in *Medicago truncatula* Using Quantitative Phosphoproteomics;** Christopher M. Rose; Paul A. Grimsrud; Maegen Howes-Podoll; Désirée den Os; Muthusubramanian Venkateshwara; Michael R. Sussman; Michael S. Westphall; Jean-Michel Ané; Joshua J. Coon; *University of Wisconsin, Madison, WI*
- ThP 523 **HPLC-ESI-MS/MS Analysis of Phosphorylation of Protein Phosphatase 1 Regulatory Subunit 12B;** Kimberly Pham¹; Alex Chao¹; Morgan Zingsheim¹; Xiangmin Zhang¹; Zhengping Yi^{1,2}; ¹Arizona state university, Tempe, AZ; ²Wayne State University, Detroit, MI
- ThP 524 **Determining the Absolute Stoichiometry of Phosphorylation Sites by Multiplex MRM - Studying Phosphorylation Events of Estrogen Receptor in Breast Cancer;** Dominik Domanski¹; Leigh C. Murphy²; Christoph H. Borchers¹; ¹UVic-GBC Proteomics Centre, Victoria, BC; ²University of Manitoba, Winnipeg, Canada
- ThP 525 **Optimizing the Conditions of Phosphopeptide Enrichment for Quantification of Phospho-Proteins by LT-SRM in FFPE Tissues;** Wei-Li Liao; Sheeno Thyparambil; Kathleen Bengali; Joe Abdo; Marlene Darfler; David Krizman; Todd Hembrough; Jon Burrows; *Expression Pathology Inc., Rockville, MD*
- ThP 526 **Identification of Growth Hormone Signaling Proteins in 3T3-F442A preadipocytes by Quantitative Phosphoproteomic Analysis;** Hye Kyong Kweon; Bridgette N. Ray; Lawrence S. Argetsinger; Christin Carter-Su; Philip C. Andrews; *The University of Michigan, Ann Arbor, MI*
- ThP 527 **Deciphering the Cross-Talk between the Proteasome Degradation Pathway and a MAPK Signaling Pathway using Quantitative Mass Spectrometry;** Robyn Kaake; Jicheng Duan; Elizabeth Gordon; Lee Bardwell; Lan Huang; *University of California, Irvine, CA*
- ThP 528 **Phosphorylation Regulates the Phosphodiesterase Activity of GPD5, an Enzyme that Breaks Down the Osmoprotective Organic Osmolyte Glycerophosphocholine;** Supachai Topanurak; Joan Ferraris; Jinxi Li; Chester Williams; Maurice Burg; *National Institutes of Health, Bethesda, MD*
- PROTEINS: GENERAL; 529 - 549**
- ThP 529 **Determination of the Binding Sites of Toluene Diisocyanate on Human Serum Albumin by Tandem Mass Spectrometry;** Justin M. Hettick; Paul D. Siegel; *NIOSH, Morgantown, WV*
- ThP 530 **Replication Fork Association of Schizosaccharomyces -Pombe DNA helicase Pfh1;** Karin R. McDonald; Virginia A. Zakian; Ileana M. Cristea; *Princeton University, Princeton, NJ*
- ThP 531 **Evolution of the Protein Content in the Rat Lens with Age and Cataract Development;** Lyudmila Kopylova¹; Ivan Cherepanov^{1,2}; Olga Snytnikova¹; Nataliya Kolosova³; Yuri Tsentlovich¹; ¹International Tomography Center, Novosibirsk, Russian Federation; ²Novosibirsk State University, Novosibirsk, Russian Federation; ³Institute of Cytology and Genetics SB RAS, Novosibirsk, Russian Federation
- ThP 532 **State of Cysteine Residues and Disulfide Bonds of Lactoperoxidase: Impact on the Formation and Delocalization of Protein-Centered Radicals;** Olivier Lardinois; Ronald Mason; Kenneth B. Tomer; Leesa Deterding; *NIEHS, Rtp, NC*
- ThP 533 **Development of Lipoprotein Synthesis Measurement using LC-MS and Deuterated Water Labeling;** Haihong Zhou; Theresa Mclaughlin; Kithsiri Herath; Michael Lassman; Rory Rohm; Sheng-ping Wang; Keiana Dunn; Alison Kulick; Douglas Johns; Stephen Previs; Brian Hubbard; Thomas Roddy; *Merck & Co., Inc., Rahway, NJ*
- ThP 534 **Identification of Animal Species by the MALDI-MS of Collagen in Animal Glues of Chinese Ink Sticks;** Kazuki Kawahara¹; Yuzo Yamazaki²; Atsuko Ogami¹; Hiroki Kuyama³; Miho Muguruma¹; Naomi Ueda⁴; Akira Yamauchi⁴; Atsuko Miyaji¹; Yoshiki Matsuo¹; Osamu

- Nishimura³; Takashi Nakazawa¹; ¹Nara Women's University, Nara, Japan; ²Shimadzu Corporation, Kyoto, Japan; ³Osaka University, Osaka, Japan; ⁴Gangoji Institute for Research of Cultural Property, Nara, Japan
- ThP 535 **Characterization of Human Growth Hormone for the Development of Candidate Reference Material**; Youxun Jin; Yong-Hyeon Yim; Sook-Kyung Kim; Sang-Royul Park; Hun-Young So; KRISS, Daejeon, South Korea
- ThP 536 **Development of Arginine and Guanine Specific Isotope-Labelled Linkers for the Characterisation of Binding Interactions by Mass Spectrometry**; Andrew N Holding; Elaine Stephens; MRC, Cambridge, UK
- ThP 537 **Analysis of Methionine Oxidation and Repair in *Helicobacter pylori***; Manish Mahawar; ViLinh Tran; Robert J. Maier; Joshua S. Sharp; University of Georgia, Athens, GA
- ThP 538 **Response of the *Drosophila melanogaster* Mitochondrial Proteome to Oxidative Stress imposed using the Superoxide Generator, Paraquat**; Suresh Narayanasamy; David Simpson; Mike Grotewiel; Scott Gronert; Virginia Commonwealth University, Richmond, VA
- ThP 539 **Improving Sequence Coverage and Analysis Time for a Methylated Protein Using Microwave-Assisted Enzymatic Digestion**; Maggie Thomasson; Michelle Sweeney; Kevin Roberson; Megan Macnaughtan; Louisiana State University, Baton Rouge, LA
- ThP 540 **Verification of Fish Species by Protein Profiling Using MALDI-TOF Mass Spectrometry**; Sergei Dikler; Alexander Post; Bruker Daltonics Inc., Billerica, MA
- ThP 541 **Vapor Treatment of Electrospray Droplets for Biomolecule Manipulation**; Anastasia Kharlamova; Boone Prentice; Christine Fisher; Jessica Demuth; Joshua Gilbert; Scott A. Mcluckey; Purdue University, West Lafayette, IN
- ThP 542 **Comprehensive Proteomic Analysis of a Model Rat Microglial Cell Line Using Multidimensional Chromatography and Tandem Mass Spectrometry**; Harris Bell-Temin¹; Bin Liu²; David S. Barber³; Ping Zhang²; Stanley M. Stevens, Jr. ¹; ¹CMMB Department, University of South Florida, Tampa, FL; ²Department of Pharmacodynamics, Univ. of Florida, Gainesville, FL; ³Dept. of Physiological Sciences, Univ. of Florida, Gainesville, FL
- ThP 543 **Measuring Kinetic Isotope Effects on Enzyme Systems through TRESI-MS**; Peter Liuni¹; Derek Wilson ^{1,2}; ¹York University Department of Chemistry, Toronto, ON; ²Center for Research in Mass Spectrometry, Toronto, ON
- ThP 544 **Deciphering the Ribosome Composition during Cell cycle by 16/180 Labelling**; Dominic Winter^{1,2}; Marc Kirchner ^{1,2}; Stephane Belin^{1,2}; Hanno Steen^{1,2}; Judith Jebanathirajah Steen^{1,2}; ¹Boston Childrens Hospital, Boston, MA; ²Harvard Medical School, Boston, MA
- ThP 545 **Highs and Lows: Small to Large Protein Analysis with Matrix-Assisted Inlet Ionization (MAII) Techniques in Positive and Negative Ion Mode**; Christopher Lietz; Alicia Richards; Yue Ren; Sarah Trimpin; Wayne State University, Detroit, MI
- ThP 546 **Removal of Neutral and Ionic Additives from Protein Solutions by an Electrophoretic Method Coupled with Top-Down Mass Spectrometry Analysis**; Pei-Jing Pai; Stephanie M. Cologna; William K. Russell; Gyula Vigh; David H. Russell; Texas A&M University, College Station, TX
- ThP 547 **Pseudo MS³ Analysis of Protein Precursor Ions in Absence of Mobile Protons via Electrospray Ionization and Quadrupole Time-of-Flight Mass Spectrometry**; Jianzhong Chen ^{1,2}; Pavel Shiyonov¹; John Schlager¹; Kari Green-Church ²; ¹Air Force Research Laboratory, Dayton, OH; ²The Ohio State University, Columbus, OH
- ThP 548 **Analysis of Protein/Peptide Disulfide Bonds by Electrochemical Mass Spectrometry**; Yun Zhang; Mei Lu; Howard D. Dewald; Hao Chen; Ohio university, Athens, OH
- ThP 549 **Substrate Selectivity and Mechanism of the picNuA4 Histone Acetyltransferase Enzyme Complex as Revealed by Isotopic Labeling and LC-MS/MS**; Susan Lee^{1,2}; Kevin M. Arnold³; John M. Denu³; ¹Children's Hospital Los Angeles, Los Angeles, CA; ²University of Southern California, Los Angeles, CA; ³University of Wisconsin, Madison, Madison, WI
- PROTEINS: CONFORMATION ANALYSIS; 550 - 563**
- ThP 550 **Assembly Mechanism of Hemoglobin Studied by Native Electrospray Mass Spectrometry**; Jenna-Jiangqiang Liu; Lars Konermann; Univ. of Western Ontario, London, Canada
- ThP 551 **The Gas-Phase Conformation of Green Fluorescent Protein Studied by IMS-MS**; Konstantin Barylyuk; Robert J. Nieckarz; Pavel Sagulenko; Vladimir Frankevich; Elisabetta Boeri Erba; Renato Zenobi; ETH Zurich, Zurich, Switzerland
- ThP 552 **Protein Structure Similarities and Differences Between Species as Revealed by SNAPP-MS**; Yuanqi Tao; Riverside, CA
- ThP 553 **Combining SNAPP (Selective Noncovalent Adduct Protein Probing) with Native Solvent Conditions via DESI (Desorption Electrospray Ionization)**; Benjamin Moore; Ryan R. Julian; University of California, Riverside, Riverside, CA
- ThP 554 **Identification of the Metal-Binding Intermediate of Metallothioneins by Electrospray Mass Spectrometry: Evidence for Cadmium(II) Preferential Binding in α -Domain**; Shu-Hua Chen; David H. Russell; Texas A&M University, College Station, TX
- ThP 555 **Precise Assessment of Protein Conformations using Three-Dimensional Structure Prediction and Traveling Wave Ion Mobility Mass Spectrometry**; Milady R. Niñonuevo; Julie A. Leary; University of California-Davis, Davis, CA
- ThP 556 **Using Supercharging Agents to Improve Top-Down Sequencing by ETD and to Study Gas-Phase Protein Folding**; Helene Philogene; Richard Vachet; University of Massachusetts, Amherst, MA
- ThP 557 **Protein Folding Studied by Vapor Treatment of Electrospray Droplets**; Anastasia Kharlamova; Scott A. Mcluckey; Purdue University, West Lafayette, IN
- ThP 558 **Conformation and Self-Assembly of the Transmembrane Peptide Gramicidin A:**

- Insights from Ion Mobility Spectrometry and Molecular Dynamics;** Liuxi Chen; Yi-Qin Gao; David H. Russell; *Texas A&M University, College Station, TX*
- ThP 559 **Detection of a Protein Conformational Equilibrium by Electrospray Ionisation-Ion Mobility-Mass Spectrometry;** Matthew Jenner¹; Jacqueline Ellis²; Wei-Cheng Huang²; Emma Lloyd Raven³; Gordon C.K. Roberts²; Neil J. Oldham¹; ¹*School of Chemistry, University of Nottingham, Nottingham, UK;* ²*Department of Biochemistry, University of Leicester, Leicester, UK;* ³*Department of Chemistry, University of Leicester, Leicester, UK*
- ThP 560 **Structural Proteomics Characterization of Prion Protein Aggregation;** Evgeniy Petrotchenko¹; Aileen Patterson¹; Ashley Cabecinha¹; Jun Han¹; Jason Serpa¹; David Wishart²; Christoph Borchers¹; ¹*UVic-GBC Proteomics Centre, Victoria, CANADA;* ²*University of Alberta, Alberta, Canada*
- ThP 561 **Chemical Cross-Linking and High Resolution Mass Spectrometry for Protein Structure Modeling;** Daniel Rozbesky^{1,2}; Petr Man^{1,2}; Karel Bezouska^{1,2}; Petr Novak^{1,2}; ¹*Institute of Microbiology, Prague, Czech Republic;* ²*Faculty of Science, Charles University, Prague, Czech Republic*
- ThP 562 **Structural Flexibility of Glyceraldehyde 3-Phosphate Dehydrogenase Revealed by H/D Exchange and Mass Spectrometry;** Tatsuya Yamamoto^{1,2}; Yasuaki Kabe^{1,2}; Seiki Kuramitsu^{3,4}; Makoto Suematsu^{1,2}; ¹*Keio University, Tokyo, JAPAN;* ²*Suematsu gasbiology project, ERATO, JST, Tokyo, JAPAN;* ³*Osaka University, Osaka, JAPAN;* ⁴*RIKEN Spring-8 Center, Sayo, JAPAN*
- ThP 563 **Study of the Redox Mechanism of Ape 1 by HDX-MS;** Jun Zhang¹; Millie M. Georgiadis^{2,3}; Michael L. Gross¹; ¹*Washington University in St. Louis, St. Louis, MO;* ²*Indiana University School of Medicine, Indianapolis, IN;* ³*Indian University-Purdue University, Indianapolis, IN*
- GLYCOPROTEINS: NEW APPROACHES; 564 - 586**
- ThP 564 **Characterization of O-glycans from Chicken Intestinal Mucins by LC-MSⁿ Reveals Insights in *Campylobacter jejuni* Adherence;** Weston Struwe¹; Ronan Gough²; Karina Marino¹; Stephen Carrington²; Billy Bourke²; Niclas Karlsson³; Pauline Rudd¹; ¹*NIBRT Dublin-Oxford Glycobiology Laboratory, Dublin, Ireland;* ²*University College Dublin, Dublin, Ireland;* ³*University of Gothenburg, Gothenburg, Sweden*
- ThP 565 **Hydrogen Bond Stabilized Galactopyranose in Collagen Derived O-Linked Glycopeptides is Responsible for Their Anomalous Collision Induced Dissociation Pattern;** Irina Perdivara¹; Lalith Perera¹; Marnisa Sricholpech²; Mitsuo Yamauchi²; Kenneth B. Tomer¹; ¹*National Institute of Environmental Health Science, Research Triangle Park, NC;* ²*North Carolina Oral Health Institute, Research Triangle Park, NC*
- ThP 566 **ETD-MS Based Mapping of Clustered O-Linked Glycans on Mucin-Type Glycopeptides;** Morten Thaysen-Andersen¹; Brendan Wilkinson²; Richard J. Payne²; Nicole H. Packer¹; ¹*Macquarie University, Sydney, Australia;* ²*Sydney University, Sydney, Australia*
- ThP 567 **Serial Affinity Chromatography As A Selection Tool In Glycoproteomics;** Kwanyoung Jung; Wonryeon Cho; Fred Regnier; *Purdue University, West Lafayette, IN*
- ThP 568 **Mass Spectrometric Identification and Characterization of Sialylated O-Linked Glycopeptides using TiO₂-Enrichment Combined with Enzymatic and Chemical de-Glycosylation;** Sara Eun Lendal; Arkadiusz Nawrocki; Peter Højrup; Martin Røssel Larsen; *Protein Research Group, Odense, Denmark*
- ThP 569 **Enriching Acidic Glycopeptides with Functionalized Silica;** Ed Bodnar; Helene Perreault; *University of Manitoba, Winnipeg, Canada*
- ThP 570 **Microfluidic-based NanoLC/TOF for Rapid and Automated Characterization of N-linked Glycans from monoclonal Antibodies;** Stephan Buckenmaier; Tom Van De Goor; Lukas Trojer; *Agilent Technologies, Waldbronn, Germany*
- ThP 571 **Microfluidic Chips for Glycopeptide Analysis;** Gregory O. Staples; Maggie A. Bynum; Hongfeng Yin; Kevin Killeen; *Agilent Laboratories, Santa Clara, CA*
- ThP 572 **Analysis of Protein Glycosylation Using Multi-Dimensional Separation and Multi-Stage Mass Spectrometry;** Fan Xiang¹; Liang Zhao²; ¹*Shimadzu Biotech, Pleasanton, CA;* ²*University of the Pacific, Stockton, CA*
- ThP 573 **HILIC-MRM Assays Targeting for Analyzing Site-Specific Glycans of Multiple-Sites Glycosylated Proteins and Glycoprotein Mixtures;** Hongwei Xie¹; Joe Riniger²; Weibin Chen¹; ¹*Waters Corporation, Milford, MA;* ²*Protein Sciences Corporation, Meriden, CT*
- ThP 574 **Identification and Quantification of glycopeptides using LC/MSMS and Multiple Reaction Monitoring (MRM) Mode;** Swetha Pyreddy; Ehwang Song; Yehia Mechref; *Texas Tech University, Lubbock, TX*
- ThP 575 **A General Approach for Glycoprotein Analysis by Glycopeptide Mapping and Glycan Semi-Quantitation;** Yanming An; John F. Cipollo; *Food and Drug Administration/CBER, Bethesda, MD*
- ThP 576 **Comparison of PID Product on Synapt HDMS and PI Scan on 4000 Q-trap for Identification of N-linked Glycoproteins;** Yong Yang¹; Robert Sherwood²; Wei Chen²; Theodore Thannhauser¹; Sheng Zhang²; ¹*USDA-ARS at Cornell University, Ithaca, NY;* ²*Proteomics & Mass Spectrometry Facility, Cornell, Ithaca, NY*
- ThP 577 **Comparative Studies of Glycoprotein Using Isotope Labeling and Electrospray Ion Trap Mass Spectrometry;** Yi-Chun Ma¹; Chih-Yu Lin²; Guor-Rong Her¹; ¹*National Taiwan University, Taipei, Taiwan;* ²*Academia Sinica, Taipei, Taiwan*
- ThP 578 **Approaching Full Sequence Coverage of Glycoproteins using Multiple Enzymes and Microwave-Assisted Digestion;** Marion Rohmer; Dominic Baeumlisberger; Benjamin F. Mueller; Tobias Beckhaus; Michael Karas; *Goethe University, Frankfurt Am Main, Germany*
- ThP 579 **Automated N-Glycopeptide Lookup from Glycan Databases using Tandem Mass Spectra;** Kevin B. Chandler¹; Petr Pompach¹; Marshall Bern²; Radoslav Goldman¹; Nathan J. Edwards¹; ¹*Georgetown University, Washington, DC;* ²*Palo Alto Research Center, Palo Alto, CA*

- ThP 580 **Top-Down Tandem Mass Spectrometry on Glycoproteins Using a Qh/FT-ICR Hybrid Mass Spectrometer**; Sandrine Bourgoin-Voillard; Nancy Leymarie; Catherine E Costello; *Boston University School of Medicine, Boston, MA*
- ThP 581 **Tandem Mass Spectrometric Characterization of Sialylated Glycopeptides by FTICR MS**; Fenjie Li; Hui Liu; Zhili Li; *Chinese Academy of Medical Sciences, Beijing, China*
- ThP 582 **Automated Glycopeptide Analysis System Combining Glycopeptide Analysis Software and MALDI-DIT MS**; Masaki Murase¹; Hidenori Takahashi¹; Kentaro Morimoto¹; Shigeki Kajihara¹; Sadanori Sekiya¹; Shinichi Iwamoto¹; Koichi Tanaka¹; Chee-Hong Wong²; Hong Wang^{2,3}; Samir Hanash²; ¹Shimadzu Corporation, Kyoto, JAPAN; ²Fred Hutchinson Cancer Research Center, Seattle, WA; ³Ventana Medical Systems, Inc., Oro Valley, AZ
- ThP 583 **High Sensitive MALDI Analyses of Glycopeptides Using Liquid Matrices 3-AQ/CHCA and 3-AQ/CA**; Yuko Fukuyama; Natsumi Funakoshi; Shinichi Iwamoto; Koichi Tanaka; *Shimadzu Corporation, Kyoto, Japan*
- ThP 584 **Evaluation of Tandem Mass Tags for Profiling the N-linked Glycoproteome**; Hannes Hahne¹; Patrick Neubert¹; John C. Rogers²; Bernhard Kuster¹; ¹Technical University Munich, Freising, Germany; ²Thermo Fisher Scientific, Rockford, IL
- ThP 585 **Automatic MS/MS Characterization of N-linked Glycopeptides**; Andrea Kiehne; Anja Resemann; Ulrike Schweiger-Hufnagel; Rainer Paape; Arndt Asperger; Detlev Suckau; *Bruker Daltonik GmbH, Bremen, Germany*
- ThP 586 **GlycoPep Grader-An Automated Analysis Tool to Determine N-linked Glycopeptide Composition from MS² Data**; Carrie Woodin; David Hua; Morgan Maxon; Kathryn Rebecchi; Eden Go; Heather Desaire; *KU Bioanalytical Division, Lawrence, KS*
- PROTEOMICS: IDENTIFICATION AND QUANTIFICATION IN CLINICAL APPLICATIONS; 587 - 607**
- ThP 587 **Multiplex-MRM Analysis of Human Proteins Obtained from Dried Bloods Spots**; Alexander G Camenzind¹; Juncong Yang¹; Angela M Jackson¹; Dominik Domanski¹; Derek Smith¹; Tim F Oberlander²; Christoph H Borchers¹; ¹UVic Genome BC Proteomics Centre, Victoria, BC; ²CFRI, BC Children's Hospital, Vancouver, BC
- ThP 588 **Quantitative Proteome Analysis of Doxorubicin Resistance in Ovarian Cancer Cells using SILAC**; Shasha Wei¹; Xiulan Chen¹; Ying Ma²; Xiaoyuan Chen²; Fuquan Yang¹; ¹Institute of Biophysics, CAS, Beijing, China; ²NIBIB, NIH, Bethesda, MD
- ThP 589 **Differentially Expressed Proteomes of Fibroblast-Derived Pluripotent Stem Cells Using Protein-Based Reprogramming**; Ekwon Kim; Ho-Pil Min; Sungyoon Moon; Hyunsoo Kim; Kyunggon Kim; Yoowook Kwon; Hyosoo Kim; Jonghwa Jin; Youngsoo Kim; *College of Medicine, Seoul Nat'l Univ, Seoul, South Korea*
- ThP 590 **Characterizing Mitochondrial Proteomes in Primary Leukaemic Cells and Cell Lines**; Joanne B. Connolly¹; Thérèse Mckenna¹; Gushinder Kaur-Atwal¹; Claudia Langlais²; Rebekah Jukes-Jones²; Kelvin Cain²; ¹Waters, Manchester, UK; ²MRC Leicester, Leicester, UK
- ThP 591 **Proteome Analysis of Plasma Microparticles from Patients with Systemic Lupus Erythematosus**; Ole Østergaard; Christoffer T Nielsen; Niels H H Heegaard; *Statens Serum Institut, Copenhagen, Denmark*
- ThP 592 **Proteomic Analyses of EGFR-Interacting Proteins to Elucidate Differences in Signal Transduction Downstream of Lung Cancer-Specific Mutant EGFRs**; Udayan Guha¹; Todd M. Greco²; Abhilash Venugopalan¹; Harold E. Varmus^{3,4}; Ileana M. Cristea²; ¹Medical Oncology Branch, National Cancer Institute, Bethesda, MD; ²Dept. of Molecular Biology, Princeton University, Princeton, NJ; ³National Human Genome Research Institute, Bethesda, MD; ⁴National Cancer Institute, Bethesda, MD
- ThP 593 **Identification and Relative Quantification of Differentially Expressed Bacterial Proteins after Antibiotic Treatment**; Gushinder Kaur-Atwal¹; Joanne B. Connolly¹; Thérèse Mckenna¹; Julia Elisabeth Bandow²; ¹Waters Corporation, Manchester, UK; ²Ruhr-Universität Bochum, Bochum, Germany
- ThP 594 **Secretome Analysis of Unrestricted Somatic Stem Cells- Identification of Novel Candidate Neurite Outgrowth Factors**; Heiner Falkenberg¹; Jessica Schira²; Hans Werner Müller²; Helmut E. Meyer¹; Kai Stühler¹; ¹Medizinisches Proteom-Center, Bochum, Germany; ²Molecular Neurobiology, University Hospital, Duesseldorf, Germany
- ThP 595 **Identification of Proteins from Taenia solium Tapeworms in Different Stages of Proglottid Maturation**; Miguel García¹; Cesar Costa Vera¹; Elizabeth Minda²; Richar Rodriguez²; André M. Deelder³; Magnus Palmblad³; ¹Escuela Politécnica Nacional / Dept. de Física, Quito, ECUADOR; ²Centro Internacional de Zoonosis-U Central, Quito, Ecuador; ³Leiden University, Leiden, Netherlands
- ThP 596 **Study of ESBL Producing- and Beta Lactam-Sensitive E.coli using MALDI-TOF-MS and Hybrid MALDI-QIT-TOF Tandem Mass Spectrometry**; Omar Belgacem¹; Emmanuel Wey²; Indran Balakrishnan²; Shervanthi Homer-Vanniasinkam³; Valery Edwards-Jones³; Pranav Somaia³; ¹Shimadzu, Kratos, Manchester, UK; ²Royal Free Hospital, London, UK; ³NPIMR-UCL, London, UK
- ThP 597 **Targeted Proteomic Analysis of Laser Capture Microdissected Breast Cancer Tissues for Exploring Field Effects on Normal Epithelia Adjacent to Tumor**; Sangwon Cha¹; Shemeica N. Binns²; Dennis C. Sgroi²; Barry L. Karger¹; ¹Northeastern University, The Barnett Institute, Boston, MA; ²Massachusetts General Hospital, Charlestown, MA
- ThP 598 **Profiling Changes in the Surface Proteome of Mycobacterium avium During Early Infections by LC-MS/MS**; Michael McNamara; Li Zhang; Shin-Cheng Tzeng; Claudia Maier; Joseph Beckman; Luiz Bermudez; *Oregon State University, Corvallis, OR*
- ThP 599 **Molecular-Level Elucidation of the Anti-Carcinoma Mechanisms of New Agents via High-Resolution, Comparative Analysis of the Drug-Responsive Proteomic Signatures**; Frank

- Engler; Chengjian Tu; Jun Li; Jun Qu; *University at Buffalo, Amherst, NY*
- ThP 600 **Investigation of Natural HLA-DR Associated Peptides in Rheumatoid Arthritis or Antibiotic-Refractory Lyme Arthritis by Mass Spectrometry;** Chunxiang Yao¹; Elise E. Drouin²; Robert Seward^{1,2}; Allen C. Steere²; Catherine E. Costello¹; ¹*Boston University School of Medicine, Boston, MA*; ²*MGH, Harvard Medical School, Boston, MA*
- ThP 601 **Histone H1 Phosphorylation as a Biomarker for Invasiveness in Human Bladder Cancer;** Kelly H. Telu; Besma Abbaoui; Steven K. Clinton; Amir Mortazavi; Michael A. Freitas; *Ohio State University, Columbus, OH*
- ThP 602 **Protein Differences Associated with Human Papillomavirus Status in Oropharyngeal Squamous Cell Carcinoma (OSCC);** Nico Jehmlich²; Brandee Brown¹; Wendell Yarbrough¹; Daniel C. Liebler¹; Robert Slebos¹; ¹*Vanderbilt Univ. School of Medicine, Nashville, TN*; ²*Ernst-Moritz-Arndt-University, Greifswald, Germany*
- ThP 603 **Proteomics of Human HIV-CSF Based on Multiplex Separation of Intact Proteins;** Adriana Bora; Dawn Chen; Carols Anderson; Muznabanu Bachani; Justin McArthur; Ned Sacktor; Avindra Nath; Robert Cotter; *Johns Hopkins School of Medicine, Baltimore, MD*
- ThP 604 **Protein Expression Signatures of Epidermal Growth Factor Receptor Inhibition;** Matt Myers¹; Daniel C. Liebler²; ¹*Vanderbilt University, Nashville, TN*; ²*Vanderbilt Univ. School of Medicine, Nashville, TN*
- ThP 605 **Quantitative Studies of Cancer Epigenetics Using Label-Free Top Down and Bottom Up to Interrogate Histone Modifications;** Jeremiah D. Tipton; Steve M.M. Sweet; Yupeng Zheng; Kenneth R. Durbin; Mingxi Li; Paul M. Thomas; Neil L. Kelleher; *Northwestern University, Evanston, IL*
- ThP 606 **Mammalian Sirtuins SIRT1-7: A New Family of Antiviral Genes;** Emre Koyuncu; Yana Miteva; Hanna Budayeva; Thomas Shenk; Ileana M. Cristea; *Princeton University, Princeton, NJ*
- ThP 607 **Hemoglobin Variant Analysis Using an LTQ-Orbitrap Top-down Platform with ETD, HCD and LTQ-CID;** Roger Theberge; Nancy Leymarie; Mark E. Mccomb; Catherine E. Costello; *Boston University School of Medicine, Boston, MA*

PROTEOMICS: NEW APPROACHES; 608 - 615

- ThP 608 **Label-Free Characterization of a Eukaryotic Protein Corona Enveloping Silver Nanoparticles;** Richard A. Eigenheer¹; K.E. Wheeler²; A.M. Lampe²; M.Y. Nakamoto²; B.S. Phinney¹; ¹*UC Davis, Davis, CA*; ²*Santa Clara University, Santa Clara, CA*
- ThP 609 **Label Free Proteomics at High Mass Accuracy using a Quadrupole TOF Mass Spectrometer;** Matthew McKay; Dylan Xavier; Thiri Zaw; Matthew Fitzhenry; Ardeshir Amirkhani; Xiaomin Song; Mark Molloy; *Australian Proteome Analysis Facility, Sydney, Australia*
- ThP 610 **Label-Free Quantification of HPLC Protein Fractions using High-Resolution Precursor Peak Isotope Pattern Matching to Monitor Global Proteome Dynamics;** Cuihong Wan; Jian Liu; Andrew Emili; *University of Toronto, Toronto, Canada*

- ThP 611 **When Every Spectrum Counts: An Integrated Grid and Cloud Enabled Software Pipeline for Identification of Elusive Proteins;** Ceereena U. Mohien¹; David R. Colquhoun^{1,2}; Lindsay A. Parish²; Ravi Tharakan¹; Rhoel R. Dinglasan²; Nathan Edwards³; David R. M. Graham⁴; ¹*Johns Hopkins School of Medicine, Baltimore, MD*; ²*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD*; ³*Georgetown University Medical Center, Washington, DC*; ⁴*Johns Hopkins Bayview Proteomics Center, Baltimore, MD*
- ThP 612 **An Isotopic Tagging and Computational Pattern Identification Method for Chemically Directed Proteomics;** Krishnan Palaniappan; Austin Pitcher; Brian Smart; Carolyn Bertozzi; *UC Berkeley, Berkeley, CA*
- ThP 613 **Quantitative Profiling of GTP Binding Proteins Using Label-free Functional Proteomics;** Kathrin Bartho; Thomas Lenz; Yan Luo; Simon Michaelis; Friedrich Kroll; Michael Sefkow; Mathias Dreger; Sabine Baumgart; Hubert Koester; *caprotec bioanalytics GmbH, Berlin, Germany*
- ThP 614 **An Ion Mobility Enabled Data Independent Acquisition Strategy for the Quantitative Characterization of Hepatocytes Secreted Rat Exosomes;** Eva Rodríguez-Suárez¹; Javier Conde-Vancells²; Esperanza González-Jimenez²; Chris Hughes³; Johannes PC Vissers³; James I Langridge³; Félix Elortza-Basterrika¹; José M Mato²; Juan M Falcón-Pérez²; ¹*Proteomic Unit, CIC bioGUNE, Derio, Spain*; ²*Metabolomic Unit, CIC bioGUNE, Derio, Spain*; ³*Waters Corporation, Manchester, UK*
- ThP 615 **Comparative Study of Label and Label-Free Techniques for Relative Protein Quantification: Precision, Accuracy, and Dynamic Range;** Marcus Sjödin; Magnus Wetterhall; Jonas Bergquist; Konstantin Artemenko; *Uppsala University, Uppsala, Sweden*

PROTEOMICS: APPLICATIONS II; 616 - 633

- ThP 616 **Chemoproteomics Profiling of HDAC Inhibitors Reveals Targeting of Multiple HDAC Complexes with Compound Class-Dependent Selectivity;** Marcus Bantscheff; Carsten Hopf; Mikhail M. Savitski; Antje Dittmann; Paola Grandi; Anne-Marie Michon; Gerard Drewes; Judith Schlegl; *Cellzome AG, Heidelberg, Germany*
- ThP 617 **Single Gene Analysis Using Chromatin DNA Rehybridization and Mass Spectrometry to Identify Transcription Factors;** Huiping Zhang; Sarah Morse; Jacqueline Mattick; Katherine Southard; Tian Zhang; Linda McGown; *Rensselaer Polytechnic Institute, Troy, NY*
- ThP 618 **An MRM Study of EZH2 and its Somatic Mutations in Follicular and Diffuse Large B Cell Lymphoma;** Annie Moradian¹; Damian B. Yap^{2,4}; S.-W. Grace Cheng¹; Tobias Berg³; R. Keith Humphries^{3,6}; Samuel A.J. R. Aparicio⁴; Gregg B. Morin^{1,5}; ¹*Genome Sciences Centre, BC Cancer Agency, Vancouver, Canada*; ²*Department of Pathology & Laboratory Medicine UBC, Vancouver, Canada*; ³*Terry Fox Laboratories, BC Cancer Agency, Vancouver, Canada*; ⁴*Department of Molecular Oncology, BC Cancer Agency, Vancouver, Canada*; ⁵*Department of Medical Genetics, UBC, Vancouver, Canada*; ⁶*Department of Medicine, UBC, Vancouver, Canada*

- ThP 619 **Mass Spectrometric Analysis of DNA-Bound Proteins From a Complex Matrix;** Michael Zickus¹; Shama Mirza¹; Hector Guillen Ahlers¹; Regina Cole¹; Molly Pellitteri-Hahn¹; Milena Zelembaba¹; Mark Scalf²; Michael Shortreed²; Lloyd M. Smith²; Lisa Cirillo¹; Michael Olivier¹; ¹Medical College of Wisconsin, Milwaukee, WI; ²University of Wisconsin-Madison, Madison, WI
- ThP 620 **Proteome-Genomics for Investigating the Role of Histone H2B Variants in Chromatin Structure;** Rosalynn Molden; Anna Arnaudo; Nicolas Young; Benjamin Garcia; *Princeton University, Princeton, NJ*
- ThP 621 **The Role of Histone H2A Variants in Epigenetic Gene Regulation;** Anna Arnaudo; Rosalynn Molden; Nicolas L. Young; Benjamin Garcia; *Princeton University, Princeton, NJ*
- ThP 622 **Comprehensive Phosphoproteomic Mode of Action Analysis in Cultured Cell Lines and Xenograft Models;** Andreas Tebbe; *KINAXO Biotechnologies, Munich, Germany*
- ThP 623 **2-D DIGE and MS Analysis of Multicellular Tumor Spheroids in Evaluation of Breast Cancer Treatment;** Jennifer Fox¹; Susanne Grimsby²; Anneli Jorsback²; Azita Monazzam²; Kofi Nyamekye³; Åsa Hagner- McWhirter²; ¹GE Healthcare, Piscataway, NJ; ²GE Healthcare, R&D Bio Technology, Uppsala, Sweden; ³GE Healthcare, Uppsala Applied Science Lab, Uppsala, Sweden
- ThP 624 **Profiling the Interaction of Macrophage Inhibitory Factor with the Idiosyncratically Hepatotoxic Fluoroquinolone, Trovafloxacin;** Hua Tang; Scott E. Warder; Melanie J. Patterson; Paul L. Richardson; Eric A. Blomme; Michael J. Liguori; Shaun M. McLoughlin; *Abbott Laboratories, Abbott Park, IL*
- ThP 625 **Quantitative Proteomics Analysis of the Signaling Pathways that Confer Acquired Radioresistance in Pancreatic Cancer Cells;** Jianhong Zhou; Yu-Chun Du; *University of Arkansas, Fayetteville, AR*
- ThP 626 **Detection of Caspase Dependent Cleavage Substrates in TRAIL-induced Apoptosis by a Novel SILAC Based Strategy;** Gabriele Stoeckl¹; Christoph Schaab^{1,2}; Johannes Graumann³; Matthias Mann¹; ¹MPI for Biochemistry, Martinsried, Germany; ²Kinaxo Biotechnologies, Martinsried, Germany; ³Weill Cornell Medical College, Doha, Qatar
- ThP 627 **Identification of Biomarkers by Proteomic and Chromosome Comparison of Inflammatory Breast Cancer Cell Lines;** Yue Zhang; Qiaozhen Lu; Shiaw-Lin Wu; William Hancock; *Barnett Institute, Northeastern University, Boston, MA*
- ThP 628 **Quantitation of Aberrant Glycoforms by Lectin-Coupled Multiple Reaction Monitoring Mass Spectrometry;** Eun Sun Ji^{1,2}; Yeong Hee Ahn¹; Jong Shin Yoo¹; Yong-Sam Kim³; Jeong Heon Ko³; ¹Korea Basic Science Institute, Cheongwon-Gun, South Korea; ²Hannam University, Daejeon, South Korea; ³Daejeon-KRIBB-FHCRC Research cooperation center, Daejeon, South Korea
- ThP 629 **Integrated Mass Spectrometry-Based Analysis of Plasma Glycoproteins and Their Glycan Modifications;** Hong Wang^{1,3}; Chee-Hong Wong¹; Alice Chin¹; Ayumu Taguchi¹; Allen Taylor¹; Sadanori Sekiya²; Hidenori Takahashi²; Masaki Murase²; Shigeki Kajihara²; Shinichi Iwamoto²; Koichi Tanaka²; Samir Hanash¹; ¹Fred Hutchinson Cancer Research Center, Seattle, WA; ²Shimadzu Corporation, Kyoto, Japan; ³Ventana Medical Systems, Inc, Oro Valley, AZ
- ThP 630 **Enrichment and Quantitation of 3-Nitrotyrosine (3NT)-Modified Proteins;** Tasneem Muharib; Deneen Gaynor; Rena A. S. Robinson; *University of Pittsburgh, Pittsburgh, PA*
- ThP 631 **SNO-SNIPE(R): A Surface-functionalized Nanoprobe-based Identification Strategy for Protein S-Nitrosylation Enrichment;** Wei-Chieh Ching^{1,2}; Yi-Ju Chen^{2,3}; Chien-Cheng Chou⁴; Kao-Yu Chou⁵; Chun-Cheng Lin⁴; Yu-Ju Chen^{2,5}; ¹Graduate Institute of Life Sciences, National Defense Medical Center, Taipei City, Taiwan; ²Institute of Chemistry, Academia Sinica, Taipei City, Taiwan; ³IBS, National Taiwan University, Taipei City, Taiwan; ⁴Institute of Chemistry, National Tsing Hua University, Hsinchu, Taiwan; ⁵Institute of Chemistry, National Taiwan University, Taipei City, Taiwan
- ThP 632 **S-Alkylating Biotin Switch Method Combining Label-free Strategy for Site-specific Quantitation of the S-Nitrosoproteome in Human Colorectal Cancer Tissues;** Yi-Ju Chen^{1,2}; Wei-Chieh Ching^{2,3}; Hsiao-Chiao Chou²; Jinn-Shiun Chen⁴; Kay-Hooi Khoo^{1,5}; Jenn-Han Chen⁶; Yu-Ju Chen^{2,3}; ¹IBS, National Taiwan University, Taipei City, Taiwan; ²Institute of Chemistry, Academia Sinica, Taipei City, Taiwan; ³National Defense Medical Center, Taipei City, Taiwan; ⁴Colorectal Section, Department of Surgery, Chang Gung Memorial Hospital, Taoyuan, Taiwan; ⁵IBC, Academia Sinica, Taipei City, Taiwan; ⁶Translation Medicine Lab, Cancer Center, Wan-Fang Hospital, Taipei City, Taiwan
- ThP 633 **A Mass Spectrometry-Based Approach to Determine Linear Kinase Substrate Motifs;** Arminja Kettenbach¹; Tuobin Wang²; Stefan Knapp³; Chris Bailey-Kellogg²; Scott Gerber¹; ¹Dartmouth Medical School, Hanover, NH; ²Dartmouth College, Hanover, NH; ³University of Oxford, Oxford, UK

PROTEIN THERAPEUTICS: QUANTITATIVE ANALYSIS; 634 - 646

- ThP 634 **Identification and Validation of Vaccine Candidate Proteins by 2-Dimensional Mass Spectrometry Analysis of Group A Streptococcus;** Lori C Stansberry; Angela Payne; Julie Skinner; Loren Schultz; Jon Heinrichs; Eberhard Durr; *Merck and Co., West Point, PA*
- ThP 635 **The Multiplexed Analysis of Two Therapeutic Monoclonal Antibodies and Non-Murine IgG in a Pharmacological Mouse Model by LC-MS/MS;** Mark Jairaj; Lloyd King; *UCB, Slough, UK*
- ThP 636 **Method Optimization on Quantitative LC - MS analysis of a Therapeutic Monoclonal Antibody (Trastuzumab) in Human Serum;** Hua Yang; Catalin Doneanu; Erin Chambers; Weibin Chen; Diane Diehl; Edouard S. P. Bouvier; *Waters Corporation, Milford, MA*
- ThP 637 **MRM Quantification of Host Cell Proteins in Protein Biopharmaceuticals;** Catalin Doneanu¹; Weibin Chen¹; Alex Xenopoulos²; St John Skilton¹; Jeff Mazzeo¹; ¹Waters Corporation, Milford, MA; ²Millipore Corporation, Bedford, MA

- ThP 638 **N-Terminal Sequence Determination of Therapeutic Proteins by Peptide Mapping LC/MS: an Alternative to Edman Sequencing;** Da Ren; Drew Nichols; Pavel V. Bondarenko; *Amgen Inc., Thousand Oaks, CA*
- ThP 639 **A Strategy for Intact Plasma Protein Quantitation Utilizing High Resolution Mass Spectrometric Detection;** Qian Ruan; Qin Ji; W. Griffith Humphreys; Mark E. Arnold; Mingshe Zhu; *Bristol-Myers Squibb Co., Princeton, NJ*
- ThP 640 **Quantitative (HPLC) and Relative Quantitative N-glycan Analysis and O-glycan Characterization of Monoclonal Antibodies by MALDI-MS;** Zaneer Segu; Alexander Rostovtsev; *Cook Pharmica, Bloomington, IN*
- ThP 641 **Quantitation of Monoclonal Antibody Glycans Using Microfluidic-based Chip with QQQ Mass Spectrometer;** Ning Tang¹; Yi Wang²; Javier Satulovsky³; Shiao-Lin Wu²; ¹Agilent Technologies, Santa Clara, CA; ²Northeastern University, Boston, MA; ³Agilent Laboratories, Santa Clara, CA
- ThP 642 **Evaluation of Fused-Core Chromatography Columns for Fast Focused Peptide Maps of Protein Biopharmaceuticals;** Chong-Feng Xu; Li Zang; Andrew Weiskopf; *Biogen Idec, Cambridge, MA*
- ThP 643 **Pitfalls of Protein Quantitation using Acid-Catalyzed O18 Labeling: the Occurrence and the Extent of Side Chain Deamidation;** Shunhai Wang; Cedric E. Bobst; Igor A. Kaltashov; *University of Massachusetts, Amherst, MA*
- ThP 644 **Identification of Hydroxylysine; a Novel Modification in Recombinant Monoclonal Antibodies;** Amanda Miller; Robert Caspary; Pranhitha Reddy; David Hambly; Ronald Gillespie; Philip Clark; Himanshu Gadgil; *Amgen, Seattle, WA*
- ThP 645 **Quantitative Analysis of 6-Thioguanine-induced Changes in the Proteome of Jurkat-T Human Leukemia Cells;** Fan Zhang; *Riverside, CA*
- ThP 646 **Development of a Methodology for Quality Control of Biological Therapeutics;** Guillaume Tremintin¹; Christian Albers²; Laura Main³; Carsten Baessmann²; Wolfgang Jabs²; ¹Bruker Daltonics Inc, Fremont, CA; ²Bruker Daltonik GmbH, Bremen, Germany; ³Bruker Daltonics Ltd, Coventry, UK
- IMMUNOLOGY; 647 - 655**
- ThP 647 **Label-free Global Proteomics Comparison of Interferon Alpha and Beta Response in Human Liver Carcinoma Huh7 Cells: Relevant to Antiviral Therapy;** Kristin E. Burnum¹; Jon M Jacobs¹; Deborah L Diamond²; Marina A Gritsenko¹; David G Camp¹; Michael G Katze²; Richard D Smith¹; ¹Pacific Northwest National Laboratory, Richland, WA; ²University of Washington, Seattle, WA
- ThP 648 **Quantitative Subcellular Proteomics Analyses of TNF- α Activated Mouse Macrophages Highlight the Selective Degradation of Mitochondria by Mitophagy;** Christina Bell¹; Luc English¹; Matthias Trost²; Magali Chemali¹; Michel Desjardins¹; Pierre Thibault¹; ¹University of Montreal, Montreal, Canada; ²MRC Protein Phosphorylation Unit, Univ. of Dundee, Dundee, UK
- ThP 649 **Using LC-MS/MS for Comparative Analysis of Monoclonal Antibodies and Quantification of Cardiac Troponins in Human Serum;** Mark S Lowenthal; John Schiel; Nathan G. Dodder; Hugo Gasca-Aragon; Leslie Bransfield; David M Bunk; *National Institute of Standards and Technology, Gaithersburg, MD*
- ThP 650 **Mass Spectrometry Analyses of Kappa and Lambda Fractions of IgG Result in Increased Number of Complementarity Determining Regions Identifications;** Ingrid Broodman; Dominique De Costa; Christoph Stingl; Lennard Dekker; Martijn Vanduijn; Jan Lindemans; Rob van Klaveren; Theo Luider; *Erasmus Medical Center, Rotterdam, the Netherlands*
- ThP 651 **Identification of a B Cell Epitope of Diphtheria Toxin by Stable Isotope Tagging and Probing of Sterically Hindered Protein Sites;** Hugo D. Meiring; Grazyna Sosinska; Joost P. Uittenbogaard; Geert P.M. Mommen; Bernard Metz; Ad P.J.M. de Jong; *Natl Inst for Public Health and the Environment, Bilthoven, Netherlands*
- ThP 652 **Mass Spectrometric Epitope Mapping without Immobilization of Neither the Antibody nor the Antigen;** Reham F. El-Kased¹; Cornelia Koy¹; Peter Lorenz²; Helen Montgomery³; Koichi Tanaka^{3,4}; Hans-Jurgen Thiesen²; Michael O. Glocker¹; ¹Proteome Center Rostock, University of Rostock, Rostock, Germany; ²Institute of Immunology, University of Rostock, Rostock, Germany; ³Shimadzu, Koichi Tanaka MS Research Laboratory, Manchester, UK; ⁴Koichi Tanaka Research Lab, Shimadzu Corporation, Kyoto, Japan
- ThP 653 **Evaluation of Label-free Quantitation Methods and Targeted Analysis of MHCII Bound Peptides;** Manolo D. Plasencia¹; Henry W. Rohrs²; Shirley J. Petzold¹; Michael L. Gross²; Emil R. Unanue¹; ¹Washington University School of Medicine, St. Louis, MO; ²Washington University, St. Louis, MO
- ThP 654 **MHC II Peptides as Breast Cancer Immunotherapy Agents;** Olesya Chornoguz; Lydia Grmai; Joshua Wilhide; Alexei Gapeev; Michael O'Neill; Suzanne Ostrand-Rosenberg; *UMBC, Baltimore, MD*
- ThP 655 **Case study: Application of Mass Spectrometry for Evaluation of N-glycans, Lipids and Protein Impurities in a Plant-Made Influenza VLP Vaccine;** Genevieve Mercier¹; Nathalie Landry¹; Julie Boisvert¹; Marc-Andre D'Aoust¹; Michele Dargis¹; François LeMauff²; Patrice Lerouge²; Louis-P Vezina¹; ¹Medicago, Quebec, Canada; ²Universite de Rouen, Mont Saint Aignan, Cedex, France
- RECOMBINANT PROTEINS: QUANTITATIVE ANALYSIS; 656 - 658**
- ThP 656 **Profiling Caspase-6 HTS Hits Using AQUA and MRM Quantitation Technique;** Tommy K. Cheung; Yichin Liu; David Arnott; Qui Phung; *Genentech, Inc., South San Francisco, CA*
- ThP 657 **Secretome Monitoring in Recombinant CHO-DG44 Cells Using Click Chemistry;** Peter G. Slade¹; Graziella Piras²; Margaret Liu²; Defne C. Koch¹; Daniela Hutanu¹; Cheryl Moody-Bartel¹; Stephen F. Gorfien³; ¹Life Technologies-Molecular Probes, Eugene, OR; ²Life Technologies-

- Invitrogen, Frederick, MD; ³Life Technologies-GIBCO, Grand Island, NY
- ThP 658 **Evaluating Stability of Antibody Drug Conjugates *in vivo* by Monitoring Changes in Average Drug-to-Antibody Ratios Using Affinity Capture LC-MS;** Luna Liu; Keyang Xu; Michelle Schweiger; Kedan Lin; Trung Nguyen; Crystal Zhang; Surinder Kaur; *Genentech, Inc., South San Francisco, CA*

PROTEINS: AGGREGATION AND AMYLOID FORMATION; 659 - 671

- ThP 659 **MALDI-TOF High Mass Calibration up to 200 kDa using Human Recombinant 16 kDa Protein Histidine Phosphatase Aggregates;** Katrin Ludwig; Schaefer Habbach; Josef Krieglstein; Susanne Klumpp; Simone Koenig; *University of Muenster, Muenster, Germany*
- ThP 660 **Identification of Novel Synphilin-1 Interactors Involved in Aggresome Formation and Parkinson Disease Pathogenesis using Tandem Affinity Purification and Mass Spectrometry;** Xiaobin Xu¹; Anatoli B. Meriin²; Nancy Leymarie²; Mark E. McComb²; Michael Y. Sherman²; Catherine E. Costello²; ¹*Boston University, Boston, MA*; ²*Boston University School of Medicine, Boston, MA*
- ThP 661 **High Throughput UHPLC-Mass Spectrometry Based Screening for Inhibitors of Microtubule Associated Protein Tau Aggregation;** Kevin Krock; Richard B. van Breemen; *University of Illinois College of Pharmacy, Chicago, IL*
- ThP 662 **The effect of Chemical Modification of HIV-1 Tat On Its Biological Function : A Cell-Culture and Mass Spectrometry Study;** Putuma P. Ggamana¹; Andrew Nel¹; Tariq Ganief¹; Zac McDonald¹; Shaun Garnett¹; Mare Vlok²; Jonathan Blackburn¹; ¹*University of Cape Town, Observatory, Cape Town, South Africa*; ²*Centre for Proteomic & Genomic Research (CPGR), Observatory, Cape Town, South Africa*
- ThP 663 **Mass Spectrometric Characterization of Recombinant and Synthetic Active Alpha-Synuclein Polypeptides;** Kathrin Lindner; *Analyt Chem and Biopolymer Structure Analysis, Konstanz, Germany*
- ThP 664 **Direct Monitoring of Heat-induced Oligomerization of Proteins with Temperature-controlled ESI-MS;** Guanbo Wang; Rinat Abzalimov; Igor A. Kaltashov; *University of Massachusetts, Amherst, MA*
- ThP 665 **Molecular Characterization of Neuronal Protein Aggregates by Footprinting, Affinity, and High-Performance Mass Spectrometry;** Brindusa - Alina Petre^{1,2}; Richard Yu-Cheng Huang²; Brian C. Gau²; Don L. Rempel²; Michael L. Gross²; Michael Przybylski¹; ¹*University of Konstanz, Konstanz, Germany*; ²*Washington University, St. Louis, MO*
- ThP 666 **Oligomer Formation of Amyloid- β Peptide and Its Interaction with Other Promoting Factors;** Zhenning Hong; Sandrine Bourgoin-Voillard; Xiaobin Xu; Catherine E. Costello; *Boston University School of Medicine, Boston, MA*
- ThP 667 **Tracing Aggregation and Fibril Formation of Amyloid Proteins and Model Hepta-Peptides with High Resolution Liquid Beam/Droplet IR-Laser Desorption Mass Spectrometry;** Heinrich Prinzhorn¹; Albina Abdrakhmanova²;

Bernd Abel¹; ¹*Ostwald-Institute for Physical Chemistry, Leipzig, Germany*; ²*Knauer GmbH, Berlin, Germany*

- ThP 668 **Familial Alzheimer's Disease-Related Mutations Alter the Structure and Formation of Oligomeric Assemblies of the Amyloid Beta-Protein;** Megan M Gessel¹; Summer Sivas¹; Xueyun Zheng¹; David Teplow²; Michael T. Bowers¹; ¹*University of California, Santa Barbara, Santa Barbara, CA*; ²*University of California, Los Angeles, Los Angeles, CA*
- ThP 669 **The Influence of Different Modifications of the Amyloid-Beta Molecule on Zinc Coordination;** Maria Indeykina^{1,2}; Igor Popov^{1,2}; Alexey Kononikhin^{1,2}; Sergey Kozin^{3,4}; Eugene Nikolaev^{1,2}; ¹*Institute for Energy Problems of Chemical Physics, Moscow, Russia*; ²*Emanuel Institute of Biochemical Physics, Moscow, Russia*; ³*Enhelgardt Institute of Molecular Biology, Moscow, Russia*; ⁴*Orekhovich Institute of Biomedical Chemistry, Moscow, Russia*
- ThP 670 **Linking the Structure of Amyloid Oligomers to Function by ESI-IMS-MS;** Timea Illes-Toth; David Moore; David Smith; *Sheffield Hallam University, Sheffield, UK*
- ThP 671 **Protein and Peptide Self-Assembly Monitored by ESI-IMS-MS;** Alison E. Ashcroft; Tom W. Knapman; Lucy Woods; David P. Smith; Sheena E. Radford; *University of Leeds, Leeds, UK*

BIOMARKERS: QUANTITATIVE ANALYSIS; 672 - 698

- ThP 672 **Dose-Dependent Proteomic Analysis of Glioblastoma Cancer Stem Cells upon Treatment with Gamma-Secretase Inhibitor;** Lan Dai¹; Yashu Liu²; Jaeman Byun³; Anuradha Vivekanandan³; Subramaniam Pennathur³; Xing Fan⁴; David M. Lubman²; ¹*Program of Bioinformatics, University of Michigan, Ann Arbor, MI*; ²*Department of Surgery, University of Michigan, Ann Arbor, MI*; ³*Dept of Internal Medicine, University of Michigan, Ann Arbor, MI*; ⁴*Dept of Neurosurgery, University of Michigan, Ann Arbor, MI*
- ThP 673 **Comparative Study of Label-Free Quantification Methods on Rat Liver Mitochondrial Proteome under Ethanol-Induced Oxidative Stress;** Shin-Cheng Tzeng¹; Li Zhang¹; Balu Chacko²; Michelle Johnson²; Victor Darley-Usmar²; Claudia Maier¹; ¹*Oregon state university, Corvallis, OR*; ²*University of Alabama at Birmingham, Birmingham, AL*
- ThP 674 **Retina Proteome Profiling in a Rat Model of Smith-Lemli-Opitz Syndrome Using a comprehensive, precise and reproducible Ion-current-Based Method;** Jun Li; Chengjian Tu; Jun Qu; *University at Buffalo SUNY, Buffalo, NY*
- ThP 675 **Combined Technical Platforms Facilitate the Identification and Quantification of Biomarkers Responding to an Anti-Diabetic Compound;** Rong-Fong Shen¹; Wells Wu¹; Cheng-Te Hsiao¹; Sajni Patel¹; Bronwen Martin¹; Seung Joon Baek²; ¹*NIA/NIH, Baltimore, MD*; ²*The University of Tennessee, Knoxville, TN*
- ThP 676 **Prospective Study of Outcomes in Sporadic versus Hereditary breast Cancer Serum Cohort: The Quest for Prediction Biomarkers of Pharmacologic Efficacy;** Theodoros Roumeliotis¹; Bashar Zeidan²; Kostas Vougas¹;

- Paul A. Townsend²; Spiros D. Garbis¹; ¹Academy of Athens, Athens, Greece; ²University of Southampton, Southampton, UK
- ThP 677 **Proteomics Investigation of Archival Lesions of Chronic Pancreatitis and Pancreatic Cancer;** Sheng Pan¹; Ru Chen¹; Tyler Stevens²; Damon May³; Martin McIntosh³; Teresa Brentnall¹; ¹University of Washington, Seattle, WA; ²Cleveland Clinic Foundation, Cleveland, OH; ³Fred Hutchinson Cancer Research Center, Seattle, WA
- ThP 678 **Large-Scale Comparative Proteomic Analysis of Isolated Colon Cancer Cells from Multiple Patients using a Comprehensive and Reproducible Ion-Current-Based Method;** Chengjian Tu; Jun Li; Wilfrido Mojica; Jun Qu; ¹University at Buffalo SUNY, Buffalo, NY
- ThP 679 **ProtPair: Pairwise Protein Expression Classifier for Candidate Biomarker Discovery;** Parminder Kaur; Daniela Schlatzer; Mark Chance; ¹Case Western Reserve Univ., Cleveland, OH
- ThP 680 **Characterization and Comparative Analysis of Proteomic Profiles of Leukemic and Primary Human NK Cells;** Di Ma; Arvinder Kapur; Mildred Felder; Manish Patankar; Lingjun Li; ¹University of Wisconsin-Madison, Madison, WI
- ThP 681 **The Use of Nitric Oxide as a Radiosensitizer of Hypoxic Prostate Cancer Characterized by Data Independent Label-free Ion Mobility LC-MS;** Grant D Stewart^{1,2}; Jyoti Nanda^{1,2}; Holger Husi²; Fouad K. Habib²; Craig Dorschel^{3,4}; Johannes PC Vissers^{3,4}; James Ross²; ¹Edinburgh Urological Cancer Group, Edinburgh, UK; ²Tissue Injury and Repair Group, Edinburgh, UK; ³Waters Corporation, Manchester, UK; ⁴Waters Corporation, Milford, MA
- ThP 682 **Label-Free Quantitative Proteomic Analysis of Experimental Autoimmune Myocarditis Induced in the Rat;** Jong Bok Seo; Joo Hee Chung; Sang Goo Kim; Soo Young Kim; Eunjung Bang; Kwan Soo Hong; ¹Korea Basic Science Institute, Seoul, South Korea
- ThP 683 **Quantitative Label-Free Protein Profiling of Mouse Hippocampus;** Lewis M. Brown¹; Joseph B. Rayman²; Alexandr Gornstein¹; Eric R. Kandel²; ¹Columbia University, New York, NY; ²Columbia University Medical Center, New York, NY
- ThP 684 **Optimizing Specificity and Sensitivity of Label-Free Quantitative Proteomics in Biomarker Discovery;** Ping Yan¹; Shucha Zhang¹; Jeffrey Whiteaker¹; Jacob Kennedy¹; Chenwei Lin¹; Susan E. Abbatiello²; Karl R. Clauser²; Naomi Chodnovskiy²; Steven A. Carr²; Amanda Paulovich¹; ¹Fred Hutchinson Cancer Research Center, Seattle, WA; ²Broad Institute of MIT and Harvard, Cambridge, MA
- ThP 685 **Improved Protein Detection and Quantification using Immunodepletion Combined with IEF Fractionation for the Detection of Plasma Biomarkers;** Mert Pekcan¹; Dominik Domanski²; Darryl B Hardie²; Juncong Yang²; Tyra J Cross²; Derek Smith²; Hilal Karagul¹; Christoph H Borchers²; ¹Ankara University Faculty of Veterinary Medicine, Ankara, TURKEY; ²UVic Genome BC Proteomics Centre, Victoria, Canada
- ThP 686 **Development of Personalized Quantitative Strategies for Cerebrospinal Fluid Proteomics;** I-Hsuan Chen¹; Yi-Chung Li²; Chia-Li Han³; Ying-Wei Lu⁴; Chun-Cheng Lin⁴; Yu-Ju Chen^{3,5}; ¹National Taiwan Normal University, Taipei, Taiwan; ²Taipei Veterans General Hospital, Taipei, Taiwan; ³Academia Sinica, Taipei, Taiwan; ⁴National Tsing Hua University, Hsinchu, Taiwan; ⁵National Taiwan University, Taipei, Taiwan
- ThP 687 **Profiling of Differentially Secreted Biomarkers from Isogenic Breast Cancer Cell Lines;** Un-Beom Kang; Bio-Medieng, Seongnam-Si, South Korea
- ThP 688 **Identification of Ageing Biomarkers in the Fungus Podospora Anserina;** Marthe Chimi; Stefan Dröse; Heinrich Heide; Ilka Wittig; Mirco Steger; Andrea Hamann; Alexandra Werner; Heinz D. Osiewacz; Ulrich Brandt; ¹Goethe University of Frankfurt, Frankfurt, Germany
- ThP 689 **High Resolution Quantitative Proteomic Analysis for Identification of Gallbladder Cancer Biomarkers;** Nandini A. Sahasrabudhe^{1,2}; Mustafa A. Barbhuiya³; Sneha M. Pinto¹; Babylakshmi Muthusamy¹; Vishalakshi Nanjappa¹; Braj R. Shrivastava⁴; Pramod K. Tiwari³; Raghothama Chaerkady²; Akhilesh Pandey^{1,2}; ¹Institute of Bioinformatics, Bangalore, India; ²Johns Hopkins University, Baltimore, MD; ³Jiwaji University, Gwalior, India; ⁴Cancer Hospital and Research Institute, Gwalior, India
- ThP 690 **A Quantitative Proteomics Timecourse Study to Identify Protein Markers of Niemann-Pick Disease, type C;** Stephanie M. Cologna; Xiaosheng Jiang; Peter S. Backlund; Christopher A. Wassif; Alfred L. Yergey; Forbes D. Porter; ¹National Institutes of Health, Bethesda, MD
- ThP 691 **Proteomic Identification of Biomarkers of Chronic Drug Exposure Using Label-Free Differential Profiling;** Xiaolei Xie¹; Daniel Lopez-Ferrer¹; Geun-Cheol Gil¹; Bich Nguyen¹; Kenneth Carr²; Howard Schulman¹; Daniel Chelsky³; Sushmita Mimi Roy¹; ¹Caprion Proteomics US LLC, Menlo Park, CA; ²New York University, New York, NY; ³Caprion Proteomics Inc., Montreal, Quebec, Canada
- ThP 692 **Comprehensive Proteome and Transcriptome Analysis of Mouse Organ of Corti;** Shi-Jian Ding^{1,2}; Miao Liu¹; Jason Pecka³; Xin Huang¹; Kirk Beisel³; ¹Department of Pathology and Microbiology, UNMC, Omaha, NE; ²Mass Spectrometry Proteomics Core Facility, UNMC, Omaha, NE; ³Department of Biomedical Sciences, Creighton Univ, Omaha, NE
- ThP 693 **Comparison of Primary and Metastatic Melanoma Cells Using SILAC and label-Free LC-MS Reveals Key Metastasis and Autophagy Pathways;** Huan Wang¹; Shengfu Piao²; Ravi K. Amaravad²; David W. Speicher¹; ¹Wistar Institute, Philadelphia, PA; ²University of Pennsylvania, Philadelphia, PA
- ThP 694 **Multi-Laboratory Examination of a Set of Designed Quantitation Standard Samples to Establish Benchmark Metrics for Isobaric Label-Based Differential Expression Studies;** Sean L. Seymour¹; Brian Williamson²; Ignat Shilov¹; Rebecca H. Monk⁴; Matt McKay³; Xiaomin Song³; Mark Molloy³; Christie L. Hunter¹; ¹AB SCIEX, Foster City, CA; ²AB SCIEX, Framingham, MA; ³APAF, Sydney, Australia; ⁴UCSD, La Jolla, CA
- ThP 695 **In vitro ¹⁸O labeling of Diabetic and Diuretic Rat Bladders;** Sara E. Tomechko¹; Guiming Liu¹;

- Hua Xu ²; Nan Xiao¹; Xiaolin Li²; Dan Meropol¹; Masaru Miyagi ²; Firouz Deneshgari^{1, 3}; Mark Chance²; ¹Case Western Reserve University School Of Medicine, Cleveland, OH; ²Case Western Reserve University, Cleveland, OH; ³University Hospitals, Department of Urology, Cleveland, OH
- ThP 696 **Quantitative Proteomic Approach To Identify Biomarkers Of Tuberculous Meningitis;** Sameer Kumar Ghantasala^{1, 5}; Sudha Rajagopalan²; Abhilash Venugopal^{3, 5}; Anita Mahadevan⁴; Harsha H. C¹; Sahasrabuddhe Nandini³; Harsh Pawar¹; Rakesh Sharma¹; Praveen Kumar¹; Keshava Prasad T. S¹; Jagadeesha Maharudraiah¹; Santosh Renuse³; Ramachandra Y. L⁵; Raghothama Chaerkady³; Shankar S. K⁴; Akhilesh Pandey³; ¹Institute of Bioinformatics, Bangalore, India; ²Agilent Technologies India Pvt. Ltd, Bangalore, India; ³Johns Hopkins University, Baltimore, MD; ⁴NIMHANS, Bangalore, India; ⁵Kuvempu University, Shimoga, India
- ThP 697 **iTRAQ Based Quantitative Proteomic Approach for Identification of Biomarkers for Intractable Temporal Lobe Epilepsy;** Abhilash Venugopal^{1, 4}; Sameer Kumar Ghantasala^{2, 4}; Anita Mahadevan³; Lakshmi Dhevi Selvan²; Santosh Renuse¹; Ramachandra Y. L⁴; Praveen Kumar²; Lavanya Balakrishnan²; Nandini Sahasrabuddhe¹; Sudha Rajagopalan⁵; Harsha H. C²; Sanjib Sinha³; Raghothama Chaerkady¹; Shankar S. K³; Satishchandra Parthasarathy³; Akhilesh Pandey¹; ¹Johns Hopkins University, Baltimore, MD; ²Institute of Bioinformatics, Bangalore, India; ³NIMHANS, Bangalore, India; ⁴Kuvempu University, Shimoga, India; ⁵Agilent Technologies India Pvt. Ltd, Bangalore, India
- ThP 698 **Mass Spectrometric Analysis of Relative Protein Expression Levels in Glioblastoma Multiforme Tissues and Lung Cancer Metastasized to the Brain;** Xi Simon Wang¹; Leroi Desouza¹; Olga Krakovska¹; Abhijit Guha²; K W Michael Siu¹; ¹York University, Toronto, Canada; ²Arthur & Sonia Labatts Brain Tumor Research Center, Toronto, Ontario

INDEX OF AUTHORS

Aaserud, David	WP 111	Aebersold, Ruedi	ThP 386	Albanese, Jenny	TP 681
Abbaoui, Besma	ThP 601	Aebersold, Ruedi	MP 596	Albarghouthi, Methal	TP 124
Abbaoui, Besma	MP 325	Aebersold, Ruedi	WP 505	Alberici, Rosana M.	MP 043
Abbatiello, Susan E.	TOA am 10:10	Aebersold, Ruedi	WP 369	Alberici, Rosana Maria	MP 041
Abbatiello, Susan E.	ThP 471	Aebersold, Ruedi	WP 583	Alberici, Rosana Maria	MP 042
Abbatiello, Susan E.	TP 668	Aebersold, Ruedi	ThOC pm 3:30	Albers, Christian	ThP 646
Abbatiello, Susan E.	WP 635	Aebersold, Ruedi	ThP 395	Albers, Dave	TP 565
Abbatiello, Susan E.	WP 507	Aebersold, Ruedi	WP 091	Albertolle, Matthew	WP 638
Abbatiello, Susan E.	ThP 684	Aebersold, Ruedi	WP 707	Albertolle, Matthew	MP 668
Abbatiello, Susan E.	MP 656	Aebersold, Ruedi	TP 698	Albrecht, Bob	WP 401
Abbatiello, Susan E.	WP 523	Aebersold, Ruedi	WP 515	Albuquerque, Claudio	TP 439
Abbott, Richard	TP 276	Aebersold, Ruedi	TOA pm 4:10	Alden, Keith	MP 272
Abdelnur, Patricia Verardi	ThP 339	Aebersold, Ruedi	ThOD am 09:30	Aldredge, Danielle	WOD pm 3:50
Abdo, Joe	ThP 525	Affolter, Michael	MP 501	Aldrich, Joshua T.	TP 450
Abdoul-Carime, Hassan	ThP 051	Afonso, Carlos	ThP 019	Aldridge, Robert	MP 078
Abdoul-Carime, Hassan	ThP 028	Afonso, Carlos	ThP 447	Alenas, Katarina	TP 592
Abdoul-Carime, Hassan	WP 338	Afonso, Carlos	WP 188	Al-Eryani, Rowaida	ThP 490
Abdoul-Carime, Hassan	WP 019	Aga, Diana S.	MP 361	Al-Eryani, Rowaida	ThP 453
Abdoul-Carime, Hassan	WP 066	Agar, Jeffrey	WP 399	Alexander, Danny	ThOF pm 2:30
Abdrakhmanova, Albina	ThP 667	Agar, Jeffrey	MP 562	Alexander, Kevin	TP 545
Abdrakhmanova, Albina	MP 049	Agar, Jeffrey N.	MP 476	Alexander, Susan C.	ThP 517
Abdrakhmanova, Albina	WOE am 10:10	Agar, Nathalie	WP 399	Alexander, Tom	TP 276
Abdul-Hadi, Kojo	ThP 461	Agar, Nathalie Y. R.	WP 442	Alexandrov, Theodore	MOD pm 2:30
Abdul-Hadi, Kojo	ThP 123	Agar, Nathalie YR	MP 476	Alexandrov, Theodore	TP 409
Abdul-Hadi, Kojo	ThP 467	Agarwal, Arun	MOC am 10:10	Alexandrov, Theodore	TP 407
Abel, Bernd	MP 049	Agarwal, Bishu	ThP 049	Alexis, Leslie	MP 621
Abel, Bernd	ThP 667	Agbandje-McKenna, Mavis	MOB pm 3:50	Alfano, Ivan	MOB pm 4:10
Abel, Bernd	WOE am 10:10	Aggrawal, Manali	WP 114	Alfaro, Josue	WP 399
Abel, Bernd	ThP 056	Aggrawal, Manali	WP 186	Al-Hajji, Adnan	MOE am 08:30
Abel, Bernd	WP 195	Agnew, Brian	TP 626	Ali, M. Ash	WP 109
Abernathy, Robert	MP 581	Agron, Ilya A.	ThP 400	Aliman, Michel	TP 421
Abiria, Sunday A.	WP 683	Agroskin, Yury	ThP 212	Aliman, Michel	ThP 078
Abraham, Paul	MOE pm 3:30	Agu, Kachicholu	MP 191	Aliman, Michel	ThP 063
Abraham, Paul	TP 388	Ahadi, Elias	TP 003	Alimuddin, Muhammad	WP 401
Abrams, Suzanne R.	TP 274	Ahlf, Dorothy	ThOD am 09:10	Al-Jawad, Hanadi	MOE am 08:30
Abrar, Mohammed	TP 252	Ahlf, Dorothy	TP 553	Allan, Sandra	MP 080
Abrar, Mohammed	WP 101	Ahlf, Dorothy R.	WOA am 10:10	Allanic, Christophe	TP 294
Abrar, Mohammed	MP 161	Ahmad, Rushdy	TP 645	Allanson, John	TP 252
Abuqayyas, Lubna	MOG am 10:10	Ahmad, Yasmeen	TP 704	Allanson, John	MP 161
Abu-Rabie, Paul	TOF am 10:10	Ahmed, Arif	TP 017	Allard, Mark	MP 424
Abu-Soud, Husam	TP 199	Ahmed, Azad	WP 350	Allard, S.	MP 424
Abzalimov, Rinat	ThP 664	Ahmed, Musahid	WP 453	Allegrand, Julie	TP 016
Abzalimov, Rinat	WP 547	Ahmed, Musahid	ThP 038	Allen, Amy	TP 336
Abzalimov, Rinat R.	WP 563	Ahn, Joomi	WP 557	Allen, Dan	ThP 065
Acely, Roger A.	TP 516	Ahn, Joomi	TP 483	Allen, David	WP 610
Acheampong, Andrew	WP 139	Ahn, Jung-Mo	MP 526	Allen, Jamie	WP 414
Acheampong, Andrew	ThP 176	Ahn, Natalie	TP 474	Allen, Jamie L.	ThP 438
Achmatowicz, Michal	ThP 446	Ahn, Natalie	MP 450	Allen, Mike	WP 095
Ackerman, Luke	TP 042	Ahn, Natalie	MP 658	Allen, Sara	TP 640
Ackerman, Luke K.	TP 352	Ahn, Natalie	TP 473	Allen, Simon	TOA am 10:10
Ackerman, Steven	WP 603	Ahn, Natalie G.	MP 581	Allen, Simon	TP 570
Ackermann, Bradley L.	WP 690	Ahn, Sung-Hoon	MP 156	Allen, Simon	MP 668
Ackermann, Bradley L.	MP 189	Ahn, Sung-Hoon	WP 248	Allen, Simon	WP 608
Adam, Frederick	MOE am 08:30	Ahn, Yeong Hee	ThP 628	Allen, Stacy	TOC am 09:30
Adam, Klaus Peter	WP 681	Aichholz, Reiner	TP 220	Alleyne-Chin, Chris	MP 674
Adam, Klaus Peter	TP 190	Aiello, Donatella	WP 133	Allmaier, Guenter	ThP 435
Adams, Chris	ThP 304	Aiello, Mauro	WP 092	Allmaier, Guenter	ThP 157
Adams, Craig	TOB am 09:30	Aiello, Mauro	WP 120	Allory, Yves	MP 683
Adams, Douglas H.	TP 367	Aiello, Mauro	MP 145	Allsup, Thurman	TOG pm 2:50
Adams, Rachel	MP 449	Aiello, Mauro	MP 146	Alm, Henrik	MP 505
Adams, Rachel	MOE pm 3:30	Aiello, Mauro	WP 327	Al-Mafraji, Kanar	TP 175
Adams, Rachel	TP 388	Ainsworth, Elizabeth	TP 639	Al-Mafraji, Kanar	TP 184
Adams, Rachel	MP 532	Aitchison, John	MP 522	Almeida, Reinaldo	MP 269
Adams, Rachel	ThP 385	Aivaliotis, Michalis	WP 540	Almeida, Reinaldo	MP 268
Adams, Rachel	ThP 402	Aizawa, Shin-Ichi	MP 538	Almeida, Reinaldo	WOC am 09:50
Adams, Richard	WP 164	Aizikov, Konstantin	MP 094	Alonso, David	TP 097
Addepalli, B.	ThOD pm 3:50	Aizza, Lilian	ThP 322	Alonso, David	MP 344
Addona, Terri	TOA am 10:10	Akashi, Satoko	WP 535	Alonso, Rosa Maria	ThOF pm 4:10
Adelfinskaya, Yelena	MP 125	Akatsu, Hiroyasu	WP 450	Alpert, Andrew J.	WP 470
Adelfinskaya, Yelena A.	TOB am 08:50	Akhmetov, Artem	MP 586	Al-Saad, Khalid A.	MP 358
Adeuya, Anthony	MP 073	Akhmetova, Evgenia	ThP 139	Altmaier, Stephan	MP 223
Adibi, Jennifer	WP 638	Akra, Mohamed	MP 687	Altman, Eleonora	MP 545
Adkins, Joshua N.	WP 220	Al-Ali, Hassan	TP 100	Altmeier, Manuel	ThP 208
Adler, Ryan	TP 280	Alary, Jean-Francois	MP 401	Alton, Kevin	ThOF pm 2:30
Adusumilli, Raval	TP 645	Alary, Jean-Francois	ThP 086	Alvarado, Rudy	TP 007
Aebersold, Ruedi	MP 690	Alawani, Nadrah	TP 333	Alvarez, Sophie	TP 446
Aebersold, Ruedi	TOA am 09:50	Al-awar, Rima	ThP 187	Alvaro Galue, Hector	MOC pm 3:50

INDEX OF AUTHORS

Alves, Gelio	MP 464	Anderson, John	TP 336	Arakawa, Kiyomi	MP 122
Alves, Gelio	WP 370	Anderson, Kenneth	WP 236	Arakawa, Kiyomi	MP 165
Alves, Sandra	TP 120	Anderson, Kim	ThP 219	Arakawa, Kiyomi	ThP 290
Alves, Sandra	TP 478	Anderson, Leigh	TP 668	Arakawa, Kiyomi	WP 171
Alves, Sandra	WP 068	Anderson, Leigh	TP 688	Arakawa, Ryuichi	MP 618
Amagai, Masayuki	ThP 442	Anderson, Leigh	WP 642	Arakawa, Ryuichi	MP 193
Aman, Ahmed	ThP 187	Anderson, Leigh	WP 507	Araki, Koiti	TP 139
Amann, Joseph M.	WP 440	Anderson, Leigh	WP 506	Aranda IV, Roman	ThP 377
Amano, Junko	TP 165	Anderson, Lisa	ThP 264	Archer, Jeffrey	MP 073
Amanullah, Ashraf	TP 108	Anderson, Michael	ThP 162	Archibold, Enada F.	TP 289
Amaral, Adam C.	TP 242	Anderson, Michelle	TP 525	Archibold, Enada F.	ThOB pm 3:10
Amaravad, Ravi K.	ThP 693	Andersson, Dan	TP 468	Archinal, Josephine	ThP 210
Ambadapadi, Sriram	WP 113	Andersson, Malin	WP 430	Argetsinger, Lawrence S.	ThP 526
Ambrose, Stephen J.	ThP 232	Andersson, Malin	MOD pm 3:30	Argikar, Upendra	WP 112
Ambrosio, Carlos Eduardo	ThP 289	Ando, Yosuke	WP 229	Argoti, Dayana	MP 153
Amdam, Gro	TP 612	Andoh, Hiroki	ThP 066	Argoti, Dayana	ThP 133
Amighi, Amirreza	TP 058	Andrade, Lawrence	TP 260	Arita, Masanori	TOC am 08:50
Amin, Jakal	TP 242	Andrae, Ulrich	ThP 518	Arlt, Wiebke	TOC am 09:50
Aminov, Alexey	WOF pm 4:10	André, Yann	ThP 315	Armbruster, Franz Paul	TP 266
Amirault, Mark	TP 530	Andrecht, Sven	MP 223	Armentrout, Peter B.	ThOE pm 4:10
Amirav, Aviv	MP 068	Andren, Per E.	TP 404	Armentrout, Peter B.	ThOB am 09:50
Amirav, Aviv	ThP 217	Andren, Per E.	TOF pm 3:10	Armistead, Paul M.	MP 053
Amiri, Farhad	WP 146	Andren, Per E.	WP 410	Armstrong, Craig	ThOE pm 3:50
Amirkhani, Ardeshir	ThP 609	Andrews, Genna L.	WP 643	Armstrong, Daniel W.	MP 169
Ammerer, Gustav	MOA pm 2:30	Andrews, Genna L.	ThP 093	Armstrong, Glen	WP 550
Amon, Kevin Yves	MP 476	Andrews, Philip	WOA am 09:10	Arnaudguilhem, Carine	TP 287
Amon, Sabine	WP 571	Andrews, Philip	TP 387	Arnaudo, Anna	ThP 620
Amos-Brown, Bianca	ThP 267	Andrews, Philip	WP 469	Arnaudo, Anna	ThP 621
Amr, Mohamed A.	MP 358	Andrews, Philip C.	ThP 526	Arnold, Kevin M.	ThP 549
Amster, I. Jonathan	MP 094	Andreyeva, Alina	TP 075	Arnold, Mark E.	ThP 639
Amster, Jon	TP 175	Andrzejewski, Denis	MP 564	Arnold, Mark E.	WP 241
Amster, Jon	WP 392	Ané, Jean-Michel	ThP 522	Arnold, Meredith	WP 497
Amster, Jon	MP 607	Ang, Joo Ern	WP 224	Arnold, Meredith	WP 502
Amster, Jon	TP 184	Angel, Pegg	MOD am 08:50	Arnold, Nikita D.	MP 468
Amster, Jon	WOD pm 2:30	Angeletti, Ruth H.	TP 587	Arnold, Randy J.	WP 397
Amundson, Lucas	TP 289	Angeletti, Ruth Hogue	WP 609	Arnotskaya, Natalia	MP 678
Amunugama, Mahasilu	TP 472	Anger, Gregory J.	WP 250	Arnott, David	ThP 501
Amunugama, Ravi	WP 610	Anholt, Robert	TP 613	Arnott, David	ThP 656
An, Eunkyung	MP 511	Anichina, Janna	MP 384	Arora, Jasbir S.	ThP 181
An, Haejung	MP 136	Anichina, Janna	ThP 092	Arora, Jasbir S.	WOC am 09:10
An, Hee Young	TP 113	Anichina, Janna	MP 383	Arora, Ritu	ThP 116
An, Hee Young	ThP 261	Annabi, Borhane	MP 336	Arrey, Tabiawang	MP 568
An, Hee Young	WP 353	Annangudi, Suresh	TOB am 08:50	Arrey, Tabiawang	TP 091
An, Hyun Joo	ThP 484	Annangudi, Suresh P.	MP 125	Arrey, Tabiawang	WP 424
An, Hyun Joo	WOG am 09:30	Annis, Allen	WP 545	Arrey, Tabiawang N.	TP 578
An, Hyun Joo	WOD am 08:50	Annis, Allen	TP 502	Arroyo Mañez, Pau	MP 127
An, Hyun Joo	TP 161	Ansong, Charles	WP 220	Artaev, Viatcheslav	ThP 302
An, Hyun Joo	MP 694	Antharavally, Babu	MP 213	Artaev, Viatcheslav	TP 097
An, Hyun Joo	WOD pm 3:50	Anthony, Donald D.	TP 705	Artaev, Viatcheslav	WP 206
An, Hyun Joo	ThOD am 09:50	Antignac, Jean-Philippe	WP 072	Artaev, Viatcheslav	TP 022
An, Hyun Joo	MP 277	Antinori, Paola	ThP 390	Artaev, Viatcheslav	WP 330
An, Yan	WP 213	Antler, Margaret	WOF pm 4:10	Artaev, Viatcheslav	MP 406
An, Yanming	ThP 575	Antler, Margaret	TP 197	Arteaga, Carlos L.	TP 566
Anagli, John	WP 649	Antoine, Rodolphe	WOF pm 3:10	Artemenko, Konstantin	ThP 615
Anand, Ganesh	MOB pm 3:30	Antoine, Rodolphe	ThP 032	Artemenko, Konstantin	TP 604
Anand, Ganesh S.	TP 497	Antoine, Rodolphe	TP 012	Arthen-Engeland, Thomas	TP 292
Andacht, Tracy	Special 001	Antoine, Rodolphe	ThP 447	Arthur, Kelly K.	WP 552
Andersen, Jens S.	MP 225	Antonakos, Cory	WP 297	Arungundram, Sailaja	TP 175
Andersen, Jens S.	TP 437	Antwi, Kwasi	TP 683	Arungundram, Sailaja	TP 184
Andersen, Mette Dahl	TP 488	Anyoji, Hisae	WP 384	Asakawa, Daiki	WP 477
Anderson, Carols	ThP 603	Ao, Xiaoping	WP 239	Asakura, Yukari	WP 405
Anderson, David	ThP 432	Aoki, Jun	TP 417	Asano, Natsuyo	MP 122
Anderson, David	TP 484	Aoki, Jun	TP 418	Asano, Natsuyo	MP 120
Anderson, David	MP 217	Aoshima, Ken	TP 674	Asano, Natsuyo	WP 171
Anderson, Emily	MP 658	Aoshima, Ken	ThP 383	Asano, Yuki	WP 535
Anderson, Eric	ThP 178	Aoshima, Masato	WP 266	Asara, John	TOD pm 3:30
Anderson, Erik H.	ThP 445	Aoyama, Eriko	MP 117	Asara, John M.	MP 330
Anderson, Erik H.	MP 018	Aparicio, Samuel A.J. R.	ThP 618	Asara, John M.	WP 395
Anderson, Gordon	WP 376	Apffel, James A.	MP 298	Asare-Okai, Papa Nii	WP 187
Anderson, Gordon	WP 377	Aponte, Angel	WP 460	Ashby, Richard	TP 331
Anderson, Gordon	MP 099	Apostol, Izzydor	WP 521	Ashcroft, Alison E.	ThP 671
Anderson, Gordon	ThP 033	Apte, Arun	TP 170	Ashfaq, Samir	TP 143
Anderson, Gordon	MP 441	Aqueel, Mohammad Sabir	WP 021	Ashgriz, Nasser	TP 058
Anderson, Gordon	TP 141	Aquino, Veronica	TP 626	Ashgriz, Nasser	TP 060
Anderson, Gordon A.	TP 450	Arabshahi, Alireza	WP 678	Ashrafi, Ghazal	TOA am 08:30
Anderson, Gordon A.	TP 160	Arafah, Karim	MOD pm 3:10	Ashton, Simon	WP 666
Anderson, Gordon A.	ThP 088	Aragno, Manuela	MP 660	Askenazi, Manor	MP 431

INDEX OF AUTHORS

Asperger, Arndt	ThP 585	Baeumlisberger, Dominic	ThP 578	Banaszewski, Katarzyna	TP 098
Asperger, Arndt	MP 566	Bafna, Vineet	MP 441	Bandeira, Nuno	MP 431
Asperger, Arndt	WP 629	Bafna, Vineet	TP 407	Bandeira, Nuno	ThP 405
Atakay, Mehmet	MP 482	Bafna, Vineet	ThP 405	Bandeira, Nuno	TP 439
Athanas, Michael	ThP 251	Bafna, Vineet	MOE pm 2:50	Bandeira, Nuno	TP 631
Athanas, Michael	TP 103	Bafna, Vineet	TP 439	Bandeira, Nuno	MP 467
Athanas, Michael	MP 402	Bag, Soumabha	MP 113	Bandeira, Nuno	TP 386
Atherton, Helen J.	ThP 265	Bagag, Aicha	ThP 491	Bandeira, Nuno	ThP 498
Atolia, Esha	MOE am 09:10	Baggerman, Geert	TP 466	Bandhakavi, Sricharan	TP 548
Atta, Massud	WP 303	Baggerman, Geert	MP 466	Bandhakavi, Sricharan	MP 448
Attwa, Mohamed	TP 045	Baginski, Robin	MP 216	Bandhakavi, Sricharan	TP 398
Attwa, Mohamed	WP 271	Bagnati, Renzo	WP 237	Bandow, Julia Elisabeth	ThP 593
Attwood, David T.	MP 018	Bagramyan, Karine	TP 518	Bandyopadhyay, Sibali	MP 270
Attwood, David T.	ThP 445	Bahreini, Roya	MP 109	Banerjee, Anirban	WP 637
Attygalle, Athula B.	WP 110	Bai, Dina L.	ThOA am 08:50	Banfield, Jillian	TP 620
Attygalle, Athula B.	WP 017	Bai, Feng	MP 178	Bang, Eunjung	ThP 682
Atwood III, James A	WP 592	Bai, Lu	MP 499	Banker, Mary Ellen	TP 282
Atwood III, James A	WP 393	Bai, Qing	TOG pm 3:10	Banks, Peter	WP 659
Atwood III, James A	WP 392	Bai, Yu	TP 037	Banoub, Josph	TP 520
Au, Jennifer	TP 508	Bai, Yu	ThP 129	Bantscheff, Marcus	ThP 616
Auchus, Richard J.	ThP 364	Bailey, Aaron	WP 476	Banuvar, Suzanne	WP 348
Auchus, Richard J.	MP 074	Bailey, Arthur	MP 128	Bao, Donghui	MP 192
Auclair, Jared R.	MP 562	Bailey, Derek	WP 015	Bao, Jiangyin	WP 230
Audebert, Marc	MP 420	Bailey, Derek	ThOE am 08:50	Barak, Ruth	MP 397
Auger, Serge	ThP 320	Bailey, Derek	WP 463	Barak, Yoram	TP 715
Auger, Serge	WP 137	Bailey-Kellogg, Chris	ThP 633	Baraldi, Eugenio	WP 227
Auger, Serge	ThP 215	Baillie, Rebecca	ThOA pm 3:10	Baran, Richard	WP 694
Auger, Serge	WP 144	Bailey, Aymeric	TP 711	Barattini, Valeria	MP 580
Auger, Serge	ThP 172	Baiocchi, Claudio	MP 660	Barbara, Joanna E.	TP 132
Augustin, Angélique	WOF pm 2:30	Bajrami, Bekim	MP 643	Barber, David S.	ThP 542
Aulak, Kulwant	MP 642	Bajrami, Bekim	TP 449	Barbhuiya, Mustafa A.	ThP 689
Aurand, Craig	WP 308	Bakalarski, Corey	MP 571	Barboza, Mariana	TP 168
Aurigemma, Christine	MP 434	Baker, Christopher W.	ThP 018	Barboza, Mariana	TP 506
Austeri, Caterina	MP 367	Baker, Erin	WP 377	Barbu, Ioana M.	TP 156
Austin, C. A.	ThP 003	Baker, Erin	ThP 033	Barcenas, Mariana	MP 342
Austin, Daniel	TOE pm 2:50	Baker, Erin	TP 141	Barclay, Victoria	WP 314
Austin, Sara B.	ThP 014	Baker, Mark	MP 288	Bardwell, Lee	ThP 527
Auzell, Nicolas	ThP 269	Baker, Peter R.	WOD am 09:30	Bar-Eli, Menashe	MP 673
Avtonomov, Dmitry M.	ThP 400	Baker, Peter R.	TP 440	Barendregt, Arjan	TP 156
Avula, Bharathi	WP 359	Baker, Peter R.	WP 587	Bark, Steven	WP 703
Avula, Bharathi	ThP 224	Baker, Peter R.	TP 265	Barker, Philip J.	MP 038
Awada, Mohamad	MP 327	Baker, Timothy R.	WP 355	Barker, Philip J.	MP 129
Awartani, Ashley	MOC pm 2:30	Bakshi, Rahul	WP 277	Barket, Dennis	MP 376
Awazu, Kunio	TP 417	Balakrishnan, Indran	ThP 596	Barkley, Robert M.	MP 255
Awazu, Kunio	TP 418	Balakrishnan, Lavanya	ThP 697	Barkow-Oesterreicher, Simon	WP 388
Aycirix, Sophie	ThP 269	Balan, Venkatesh	TP 192	Barlow, Christopher	WP 494
Ayres, David	WP 102	Balaram, P.	ThP 456	Barlow, Christopher K.	TP 133
Azad, Aasim	ThP 340	Balasubramani, Manimalha	TP 628	Barnaby, Omar	WP 593
Azevedo, Vasco	TP 644	Balcer, Jesse	TOB am 08:50	Barnakov, Alexander	TP 599
Azyat, Khalid	TP 289	Balcer, Jesse L.	MP 125	Barnard, Hans	MP 185
Azzi, Joachim	MP 191	Balch, William	ThOD am 10:10	Barnes, Alan	WP 269
Baba, Takashi	WP 005	Baldi, Pierre	TOD am 09:50	Barnes, Alan	WP 666
Babin, Michael	MP 393	Baldwin, Ian	MP 520	Barnes, Alan	ThP 111
Babson, Bruce	MP 167	Baldwin, Ian T.	ThP 231	Barnes, Alan	ThP 435
Bachani, Muznabanu	ThP 603	Balgley, Brian	MP 692	Barnes, Ian	MP 005
Bachelor, Robert	WOD am 08:50	Baliban, Richard C.	MP 470	Barnes, Jeremy S.	ThP 323
Bachmann, Brian	TP 152	Balika, Werner	ThP 157	Barnes, Matthew	TP 219
Bachschmid, Markus M.	ThP 495	Ball, Carol	TP 516	Barnes, Stephen	WP 678
Bacica, Michael	TP 158	Ball, David	TP 484	Barnes, Stephen	WP 402
Backhus, Emily	TP 048	Ball, Haydn	ThP 453	Barnett, Kathryn	WP 249
Backlund, Peter S.	WP 373	Ball, Haydn L.	ThP 490	Barnholtz-Sloan, Jill	TP 705
Backlund, Peter S.	ThP 690	Ballam, Joan	ThP 301	Barnidge, David	WP 166
Bada, Jeffrey L.	TP 144	Ballif, Bryan	TP 602	Barofsky, Douglas F.	WP 064
Bader, Gary	WP 508	Balog, Julia	TP 029	Barondeau, David P.	TP 492
Badu Tawiah, Abraham K	TP 057	Balog, Julia	ThP 393	Barr, John R.	ThOC pm 2:30
Bae, Hyun Jin	MP 155	Balog, Julia	ThP 443	Barr, John R.	MP 392
Bae, Myung Ae	MP 156	Balog, Julia	ThOG pm 2:30	Barr, John R.	MP 391
Bae, Myung Ae	WP 248	Baltazar, Graça	WP 257	Barr, John R.	TP 585
Baek, Je-Hyun	TP 579	Balthasar, Joseph P.	MOG am 10:10	Barr, John R.	ThP 394
Baek, Moon-Chang	TP 309	Baluya, Dodge	TP 463	Barran, Perdita	TP 394
Baek, Seung Joon	ThP 675	Baluya, Dodge L.	WP 416	Barran, Perdita	ThP 458
Baek, SeungRim	TP 359	Bamba, Takeshi	ThP 283	Barran, Perdita	WOB pm 4:10
Baek, SeungRim	TP 358	Bamba, Takeshi	ThP 282	Barran, Perdita	ThOE pm 3:50
Baessmann, Carsten	ThP 646	Bamba, Takeshi	ThP 281	Barrera-Arellano, Daniel	MP 043
Baessmann, Carsten	TP 318	Bamberger, Andreas	TP 420	Barrere, Caroline	TP 338
Baessmann, Carsten	TP 099	Bamberger, Casimir	ThOD am 10:10	Barrère, Caroline	TP 339
Baeumlisberger, Dominic	TP 578	Bamberger, Casimir	TP 420	Barrett-Wilt, Gregory A.	TP 623

INDEX OF AUTHORS

Barricklow, Jason	TP 282	Beauchamp, R. Daniel	MP 693	Beltran, Luisa	ThP 508
Barros Jr, Anthony	MOF am 08:50	Beaudet, Sylvie	TP 374	Ben Haddou, Souade	MP 588
Barrow, Mark P.	MP 363	Beaudry, Francis	WP 278	Ben Haddou, Souade	WP 481
Barry, Jeremy	MP 012	Beaudry, Francis	MP 508	Benabdelkamel, Hicham	ThP 317
Barry, Richard	ThP 315	Beaudry, Randy	MP 320	Benari, Yair	ThP 034
Barry, William	MP 403	Beaulieu, John C.	ThP 326	Benassi, Mario	MP 026
Barry, William	MP 100	Beaumont, Claire	TP 137	Bench, BJ	ThP 258
Barry, III, Clifton E.	WP 447	Bechard, Matt	ThP 463	Benchaa, Sabrina	TP 006
Barsch, Aiko	ThP 231	Becher, Dörte	ThP 460	Benchaa, Sabrina	TOD pm 2:50
Barsch, Aiko	WP 305	Becher, Francois	TP 464	Benchaa, Sabrina A.	WP 539
Barsch, Aiko	TP 195	Becher, Francois	MP 389	Bendiak, Brad	TP 171
Barshop, Bruce A.	TP 684	Becht, Steven	TP 163	Bendiak, Brad	WOD pm 3:30
Barsky, Daniel	WOB pm 2:50	Becht, Steven	TP 514	Bengali, Kathleen	ThP 525
Bartho, Kathrin	ThP 613	Beck, Dietrich	MP 108	Benink, Helene	WP 610
Bartlett, Michael G.	WP 145	Beck, Florian	MP 495	Benke, Peter	TP 717
Bartlett, Michael G.	WP 184	Beck, Jonathan	MP 411	Benner, Jack S.	TP 611
Bartlett, Michael G.	MP 310	Beck, Keith	WP 212	Benner, Jr., Bruce A.	MP 396
Bartmess, John	TP 186	Beck, Martin	WP 505	Bennett, Kevin	WP 324
Barton, Carrie	ThP 229	Beck, Martin	WP 583	Bennett, Mark	ThP 458
Barton, Doug	TP 392	Beck, Martin	ThOC pm 3:30	Bennett, Michael	WP 689
Barylyuk, Konstantin	WOA am 09:30	Beck, Melissa J.	WP 670	Bennett, Michael	WP 599
Barylyuk, Konstantin	ThP 009	Becker, Johanna Sabine	TP 426	Benoit, Jeanne	TP 715
Barylyuk, Konstantin	ThP 551	Becker, Kurt	ThP 049	Bensaddek, Dalila	MP 479
Barysz, Helena	MP 524	Becker, Michael	TP 407	Bentayeb, Karim	TP 042
Basanta Sanchez, Maria	WP 187	Becker, Michael	TP 403	Benter, Thorsten	MP 004
Basanta Sanchez, Maria	TOE am 10:10	Becker, Michael	ThP 430	Benter, Thorsten	MP 003
Basehore, Scott	MP 553	Beckhaus, Tobias	ThP 578	Benter, Thorsten	TP 071
Basheer, Chanbasha	MP 072	Beckhaus, Tobias	TP 578	Benter, Thorsten	TP 067
Basile, Franco	WP 626	Beckman, Joe	WP 346	Benter, Thorsten	MP 020
Basile, Franco	WP 625	Beckman, Joseph	ThP 598	Benter, Thorsten	MP 001
Basrur, Venkatesha	WP 389	Beckman, Joseph	MP 622	Benter, Thorsten	TP 068
Bastos, Wagner L.	TP 306	Bédard, Simon	ThP 469	Benter, Thorsten	MP 005
Batchu, Sudha Rani	MP 372	Beech, Iwona	ThP 349	Benter, Thorsten	MP 017
Batchu, Sudha Rani	MP 374	Beecher, Chris	TOC am 10:10	Benter, Thorsten	TP 070
Batchu, Sudha Rani	MP 373	Beecher, Chris	ThP 221	Benter, Thorsten	MP 006
Bateman, Kevin	TP 231	Beecher, Chris	MP 314	Benter, Thorsten	MP 002
Bateman, Nicholas	TP 669	Beecher, Francis	ThP 221	Benter, Thorsten	TP 069
Batoon, Patrick	WP 115	Beer, Lynn A.	WP 639	Benton, Paul H.	MP 433
Batt, Mike	ThOF am 08:30	Begemann, Boris	TP 716	Benton, Timothy M.	ThOB pm 3:30
Battistini, Bruno	WP 146	Beger, Richard	WP 229	Bentzley, Catherine	MP 015
Baudouin, Christophe	TOF pm 3:50	Beger, Rick	WP 664	Berberich, Matthew	TP 568
Baudys, Jakub	MP 391	Begley, Timothy	TP 353	Berchem, Guy	MP 679
Baudys, Jakub	MP 392	Begley, Timothy	TP 042	Berchtold, Christian	MP 028
Bauer, Daniela	TP 300	Begley, Timothy H.	TP 352	Berden, G.	ThP 003
Baugh, Steve	ThP 324	Behar, Françoise	MOE am 09:50	Berden, Giel	ThP 005
Baughman, Todd	WP 275	Beil, Eric	MP 201	Berden, Giel	ThOE pm 4:10
Baum, Heidi	ThP 221	Beil, Eric	WP 631	Berden, Giel	MOC pm 2:30
Baumann, Anne	TP 214	Beinsen, Alexander	ThP 056	Berden, Giel	ThP 001
Baumann, Anne	WOG pm 3:50	Beinsen, Alexander	WP 195	Berden, Giel	WP 052
Baumann, Stephan	WP 329	Beisel, Kirk	ThP 692	Bereman, Michael	TP 670
Baumann, Stephan	WP 319	Bejan, Iustinian	MP 005	Bereman, Michael	TOA pm 3:30
Baumann, Stephan	ThP 248	Bejan, Iustinian	MP 006	Bereman, Michael S.	TOE pm 3:50
Baumann, Stephan	TP 313	Bek, Stephan	MOG pm 3:30	Bereman, Michael S.	TOG pm 2:30
Baumert, Mark	WOC am 09:50	Bek, Stephan	TP 687	Berens, Michael	MP 670
Baumgaertel, Anja	TP 349	Belainine, Hesna	MP 336	Berezovskaya, Yana	ThOE pm 3:50
Baumgart, Jan	MP 269	Beland, Frederick A.	TP 320	Berezovski, Maxim	WP 343
Baumgart, Sabine	ThP 613	Bélanger, Philippe	ThP 469	Berg, Amanda	MP 222
Baumgarten, Sigrid	TP 352	Belau, Eckhard	MP 506	Berg, Amanda	TP 682
Baumgarten, Sigrid	TP 278	Belau, Eckhardt	ThOF am 09:50	Berg, Amanda	MP 221
Baveghems, Clive	ThP 069	Belford, Michael	MP 056	Berg, Amanda	ThOD am 09:10
Bavro, Vassiliy	MP 640	Belgacem, Omar	WP 298	Berg, Christian	MP 099
Baxter, Charles	WP 287	Belgacem, Omar	ThP 596	Berg, Christian	MOD am 09:30
Baxter, Douglas	MP 463	Belgacem, Omar	MP 291	Berg, Tobias	ThP 618
Baykal, Burcu	WP 547	Belgacem, Omar	ThP 435	Bergen, III, H. Robert	TP 650
Baykut, M Gokhan	MP 104	Belgacem, Omar	MP 567	Berger, Scott	WOG am 09:10
Baykut, M Gokhan	WOE pm 4:10	Belin, Stephane	ThP 544	Bergeron, Denis	WP 063
Bayliss, Mark	MP 434	Bell, Christina	ThP 648	Berget, Eric	ThP 139
Bayliss, Mark A.	ThP 210	Bell, Christina	TP 517	Bergman, Jacques J.	TP 592
Bazemore-Walker, Carthene	MP 662	Bell, Rebecca	MP 424	Bergmann, Alice M.	MP 361
Bazemore-Walker, Carthene	WP 375	Bell, Ryan	MP 375	Bergquist, Jonas	WP 430
Bazemore-Walker, Carthene	WP 704	Bellincanta, Janine M.	MP 380	Bergquist, Jonas	MOD pm 3:30
Bazhenov, Alexander	TP 075	Bell-Temin, Harris	ThP 542	Bergquist, Jonas	TP 604
Bean, Heather	MP 543	Belov, Mikhail	WOB am 08:30	Bergquist, Jonas	ThP 615
Bearup, Kristen M.	MP 664	Belov, Mikhail	MP 590	Berisha, Arton	ThOE am 10:10
Bearup, Kristen M.	WP 690	Belov, Mikhail	TP 141	Berkelman, Tom	MP 215
Beasley, Ashley	MP 206	Belov, Mikhail	ThP 033	Berkout, Vadym	ThP 013
Beato, Brian	WP 135	Belshan, Mike	TP 601	Bermudez, Luiz	ThP 598

INDEX OF AUTHORS

Bern, Marshall	ThP 579	Bigger, Brian W.	MP 279	Blanksby, Stephen J.	MP 248
Bern, Marshall W.	MP 461	Biggin, Mark D.	WP 608	Blanksby, Stephen J.	MP 129
Bern, Marshall W.	MP 447	Biggin, Mark D.	TP 570	Blanz, Joachim	TP 220
Bernevic, Bogdan	MP 414	Bilgin, Mesut	WOC am 09:30	Blase, Ryan	MP 050
Bernier, Evan	WP 235	Billheimer, Dean	WP 657	Blatherwick, Eleanor Q.	WP 413
Bernier, Frank	MP 312	Binder, Brad	MOE pm 3:50	Blatnik, Matthew	WP 172
Bernier, Ulrich R.	MP 080	Bindschedler, Laurence V.	ThP 300	Blaum, Klaus	MP 108
Bernstein, Elliot	ThP 010	Bingham, Patrick	WP 128	Blaze M. T., Melvin	MP 586
Bernstein, Elliot R.	MP 018	Binkley, Joe	MP 406	Blaze M. T., Melvin	WP 443
Bernstein, Elliot R.	ThP 445	Binkley, Joe	ThP 253	Blaze M. T., Melvin	ThP 433
Bernstein, Hans	WP 428	Binkley, Joe	WP 074	Blech, Stefan	WP 267
Berntenis, Nikolaos	WOF pm 2:30	Binkley, Joe	ThP 335	Bleiholder, Christian	WOB am 09:50
Berthier, M T	MP 340	Binkley, Joe	WP 206	Block, Timothy	MP 662
Berthiller, Franz	MP 423	Binkley, Joe	WP 330	Blomme, Eric A.	ThP 624
Berti, William R.	TOB pm 2:30	Binkley, Joe	TP 088	Blonder, Niksa	WP 291
Bertin, Denis	WP 062	Binkley, Joe	TP 097	Bloomfield, Nic	WP 306
Bertolini, Marcelo	ThP 289	Binkley, Joe	ThP 246	Bluff, Joanne	WP 444
Bertozzi, Carolyn	ThP 612	Binns, Christopher	ThP 163	Blyn, Lawrence	MP 552
Bertram, Allan K.	MP 110	Binns, Shemeica N.	ThP 597	Blyn, Lawrence	MP 551
Bertrand, Cyril	WP 079	Binscheck, Torsten	WP 364	Bo, Carles	MP 060
Bertrand, Cyril	WOF am 10:10	Binz, Pierre-Alain	WP 364	Bo, Tao	WP 122
Bertsch, James	MP 097	Birck, Pernille	MP 486	Bo, Tao	TP 079
Bérubé, Eugénie-Raphaëlle	MP 147	Bird, Adrian P.	TP 562	Bo, Tao	WP 685
Berven, Frode	TP 645	Bird, Susan S.	ThP 286	Bobbitt, Jonathan M.	WP 335
Besa, Axel	TP 266	Bird, Susan S.	TOC am 09:10	Bobst, Cedric E.	ThP 643
Besa, Axel	MP 268	Biri, Bernadett	ThP 349	Bobst, Cedric E.	TP 123
Bessette, Brad	MP 166	Biringer, Roger G.	TP 460	Bobst, Cedric E.	WP 563
Bessette, Brad	MP 162	Biringer, Roger G.	WP 531	Bobst, Cedric E.	WOG am 08:50
Bessette, Bradley	ThP 470	Biringer, Roger G.	ThP 454	Bobst, Cedric E.	TP 104
Bessire, Andrew J.	WP 415	Biswas, Avijit	ThP 496	Böcker, Sebastian	MP 520
Bessire, Andrew J.	WP 419	Biswas, Avijit	MP 556	Böcker, Sebastian	WP 366
Betapudi, Venkiah	TP 550	Bitan, Gal	TOD pm 4:10	Böcker, Sebastian	TOC am 08:30
Bethard, Jennifer R.	TP 544	Bjorklund, Jessica	TP 128	Böcker, Sebastian	TP 349
Betschart, Beatrice	ThP 109	Blachon, Gregory	ThP 189	Böcker, Sebastian	TP 208
Bettencourt, Brian	MP 174	Black, Ben	WP 476	Bodmer, Janet	ThP 506
Betz, Travis	MP 298	Black, Cheryl A.	ThP 193	Bodnar, Ed	ThP 569
Beu, Steve	MP 088	Blackburn, Chris	MP 691	Bodnar, Edward	WOD am 09:50
Beu, Steve	MP 087	Blackburn, Jonathan	ThP 267	Boeke, Jef D.	TP 434
Beu, Steve	MP 086	Blackburn, Jonathan	ThP 662	Boekema, Egbert J.	TP 156
Beu, Steven C.	WP 081	Blackburn, Kevin	MOE pm 2:30	Boelt, Sanne	WP 571
Beuning, Penny. J.	TP 494	Blackburn, Kevin	TP 584	Boeri Erba, Elisabetta	ThP 551
Beusse, Jon	ThP 203	Blackburn, Mary	WP 310	Boeri Erba, Elisabetta	WOA am 09:30
Beverly, Michael	ThOD pm 3:30	Blackburn, Mary	WP 323	Boeri Erba, Elisabetta	WP 567
Beverly, Mike	WP 176	Blacken, Grady	TP 580	Boersema, Paul	TOG am 09:30
Beyer, Jochen	ThOE am 09:10	Blackledge, Robert	WP 197	Boersema, Paul J.	TP 641
Beyerlein, David	MP 167	Blackler, Adele	TP 679	Bogala, Mallikharjuna	TP 187
Beyet, Loic	TP 363	Blackwell, Anne	WOE pm 3:30	Bogdanov, Bogdan	WP 003
Beyter, Doruk	MOE pm 2:50	Blackwell, Anne E.	WOB pm 3:50	Bogdanov, Bogdan	TP 657
Bezouska, Karel	MP 606	Blackwell, Tiffany R.	MOD pm 3:50	Boggess, William	WP 080
Bezouska, Karel	ThP 561	Bladergroen, Marco R.	TP 649	Boggio, Kristin J.	MP 476
Bezstarosti, Karel	TP 714	Blades, Michael	ThP 448	Boguszewski, Paul	ThP 114
Bhandari, Dhaka	MOD am 09:50	Blades, Michael	WP 456	Boguszewski, Paul	ThP 116
Bhardwaj, Chhavi	WP 428	Blagojevic, Voislav	MP 052	Böhm, Christine	MP 108
Bhat, Ajaz	MP 693	Blair, Ian A.	ThOF pm 2:50	Bohme, Diethard K.	MP 052
Bhat, Vadiraja	TP 605	Blair, Ian A.	WP 686	Bohn, Nathan R.	TP 553
Bhat, Vadiraja	MP 608	Blair, Ian A.	ThP 181	Bohnert, Tonika	ThP 193
Bhat, Vadiraja	WP 693	Blair, Ian A.	WOC am 09:10	Boissel, Pierre	ThP 071
Bhat, Vadiraja	TP 455	Blair, Ian A.	TP 603	Boisvert, Francois-Michel	TP 704
Bhat, Vadiraja B.	TP 638	Blair, Ian A.	MP 261	Boisvert, Julie	ThP 655
Bhat, Vadiraja B.	TP 695	Blair, Ian A.	WP 590	Bojko, Barbara	ThP 125
Bhat, Vadiraja B.	TP 622	Blake, Samantha	WP 212	Bokatjian-Johnson, Samantha	WP 490
Bhat, Vadiraja B.	TP 617	Blakney, Greg T.	MP 102	Bolanos, Ben	TP 158
Bhatia, Swapnil	MP 461	Blakney, Gregory T.	WP 081	Bolanos, Ben	MP 570
Bhatia, Vivek N.	TP 653	Blanchette, Heather	MP 174	Bolbach, Gerard	MP 478
Bhatia, Vivek N.	TP 443	Blanchette, Heather	TP 246	Bolbach, Gérard	ThP 425
Bhattacharya, Nivedita	MP 333	Blanco García, Francisco J.	WP 434	Boldin, Ivan	WOE pm 4:10
Bhattacharya, Sanjoy	ThP 278	Blandford, Jonathan	TP 445	Boldin, Ivan	MP 104
Bhattacharyya, Moitrayee	ThP 456	Blank, Paul S.	WP 373	Boldyrev, Alexey	MP 010
Bhattacharyya, Sudeepa	WP 229	Blankenship, Robert E.	TOE am 09:30	Boldyrev, Alexey	ThP 479
Bhawal, Sumit	ThP 190	Blanksby, Stephen J.	TOC pm 3:10	Boles, Kristen	WP 196
Bhuiyan, Hasan	WP 304	Blanksby, Stephen J.	ThOB pm 2:50	Bolgar, Mark S.	ThP 105
Bianchi, Giancarlo	MP 367	Blanksby, Stephen J.	MP 244	Bolgar, Mark S.	MP 168
Bickford, Janet	MP 332	Blanksby, Stephen J.	ThOB pm 3:30	Bolgar, Mark S.	TP 102
Biehl, Micheal	TOC am 09:50	Blanksby, Stephen J.	MP 243	Bolgar, Mark S.	MP 140
Bier, Mark E.	WP 313	Blanksby, Stephen J.	ThP 276	Bomgarden, Ryan	TP 452
Bierbaum, Veronica M.	ThOB am 08:50	Blanksby, Stephen J.	MP 038	Bomgarden, Ryan	MP 666
Bierbaum, Veronica M.	WP 023	Blanksby, Stephen J.	MP 253	Bomgarden, Ryan	WP 615

INDEX OF AUTHORS

Bond, Michael.....	TP 115	Boudreau, Nadine.....	TP 257	Brekenfeld, Andreas.....	ThP 085
Bondarenko, Pavel V.....	ThP 254	Boudreau, Nadine.....	TP 272	Brems, David N.....	TP 111
Bondarenko, Pavel V.....	TP 111	Boudreau, Nadine.....	TP 270	Brender, Jeffrey R.....	WOB pm 3:30
Bondarenko, Pavel V.....	WP 552	Boudreau, Nadine.....	TP 273	Brenna, J Thomas.....	MP 074
Bondarenko, Pavel V.....	ThP 638	Boudreau, Nadine.....	TP 255	Brenna, J. Thomas.....	ThP 364
Bondesson, Ulf.....	ThP 303	Boudreau, Nadine.....	WP 146	Brennen, Reid.....	TOG pm 3:10
Bonds, Kari.....	ThP 221	Boudreau, Nadine.....	TP 267	Brennen, Reid A.....	MOB am 08:30
Bones, Jonathan.....	TP 697	Boudreau, Nadine.....	TP 277	Brentnall, Teresa.....	ThP 677
Bones, Jonathan.....	MP 283	Boudreau, Nadine.....	TP 269	Brenton, Gareth.....	MP 089
Bonnaffé, David.....	WP 549	Boughner, Rodney.....	WP 242	Brenton, Gareth.....	ThP 055
Bonnaire, Yves.....	ThP 222	Boukhedimi, Yasmin.....	WP 299	Breteler, Monique M.B.....	TP 667
Bonneil, Eric.....	ThP 499	Boumsellek, Said.....	ThP 084	Bretonnière, Yann.....	WOE pm 3:10
Bonneil, Eric.....	MOA pm 3:30	Bounar, Shannon.....	ThP 182	Brett, Tom J.....	ThP 482
Bonneil, Eric.....	ThP 516	Bour, Jérôme.....	TP 337	Breuker, Kathrin.....	WP 001
Bonnel, David.....	TOF pm 2:50	Bourgoin-Voillard, Sandrine.....	ThP 666	Breuker, Kathrin.....	WP 173
Bonner, Robert.....	TP 634	Bourgoin-Voillard, Sandrine.....	ThP 580	Breuker, Kathrin.....	TP 499
Bonner, Ron.....	TP 306	Bourke, Billy.....	ThP 564	Brewer, Bobby N.....	MP 394
Bonner, Ron.....	MP 596	Bourne, Philip.....	ThP 498	Brewer, Heather M.....	WP 220
Bonner, Ron.....	ThP 295	Bouskill, Nicholas.....	WP 694	Brewer, Heather M.....	TP 160
Bonner, Ron.....	ThOG am 08:50	Boutaghou, M. Nazim.....	ThP 496	Brewer, William.....	ThP 132
Bonner, Ron.....	MP 436	Bouvier, Edouard S. P.....	ThP 636	Brewer, William E.....	TP 044
Bonner, Ron.....	ThP 262	Bouysiere, Brice.....	TP 287	Bridon, Gaëlle.....	ThP 516
Bonner, Ron.....	MP 051	Bouzom, Francois.....	TOF pm 2:50	Briggs, Steven P.....	MOE pm 2:50
Bonner, Ron.....	ThP 395	Bovée, Judith V.M.G.....	WP 436	Brignole-Baudouin, Françoise...	TOF pm 3:50
Bonner, Ron.....	WP 707	Bowden, Jared.....	TP 662	Brill, Laurence M.....	WP 621
Bonner, Ron.....	ThP 244	Bowen, Ben.....	WP 438	Brill, Laurence M.....	WOA pm 3:50
Bonner, Ron.....	WP 091	Bowen, Benjamin.....	TP 620	Brimble, Sandi.....	TP 526
Bonomelli, Camille.....	MP 290	Bowen, Benjamin.....	WP 694	Brinckerhoff, William.....	MP 067
Boons, Geert-Jan.....	TP 184	Bowen, Chester L.....	TOF am 08:50	Brinckerhoff, William.....	ThP 074
Boons, Geert-Jan.....	TP 175	Bowen, Chester L.....	ThP 112	Brinckerhoff, William.....	ThP 027
Booth, Stephanie.....	TP 451	Bower, Keith.....	MP 633	Brink, Andreas.....	TP 223
Bora, Adriana.....	ThP 603	Bowers, Jeremiah.....	WP 216	Brinkley, Sarah.....	TP 619
Borbridge, Lisa.....	WP 095	Bowers, Michael T.....	ThP 668	Bristow, Anthony W.T.....	TP 134
Borchers, Christoph.....	TP 471	Bowers, Michael T.....	WOB am 09:50	Bristow, Anthony W.T.....	MP 126
Borchers, Christoph.....	ThP 560	Bowers, Michael T.....	TOD pm 4:10	Britz-McKibbin, Philip.....	MP 355
Borchers, Christoph H.....	WP 642	Bowie, James.....	WOA am 08:30	Britz-McKibbin, Philip.....	MP 354
Borchers, Christoph H.....	WP 633	Bowman, Michael.....	MP 293	Brock, Ansgar.....	WP 554
Borchers, Christoph H.....	ThP 587	Bowness, Paul.....	ThOG am 09:30	Brock, Charles A.....	MP 109
Borchers, Christoph H.....	ThP 685	Bowness, Paul.....	MP 517	Brockhaus, Albrecht.....	TP 051
Borchers, Christoph H.....	WP 597	Bowyer, John F.....	TP 251	Brockhaus, Albrecht.....	ThP 063
Borchers, Christoph H.....	ThP 353	Boxem, Mike.....	TP 549	Brockhaus, Albrecht.....	ThP 078
Borchers, Christoph H.....	TP 689	Boyd, Jessica.....	TOB pm 2:50	Brockmann, Klaus J.....	MP 020
Borchers, Christoph H.....	MOB pm 2:30	Boyd, Jessica M.....	MP 384	Brockmann, Klaus J.....	MP 002
Borchers, Christoph H.....	WP 509	Boyer, Anne E.....	ThP 394	Brockmann, Klaus J.....	MP 004
Borchers, Christoph H.....	TOD am 08:30	Boyes, Barry.....	MP 226	Brockmann, Klaus J.....	TP 070
Borchers, Christoph H.....	WP 223	Boyes, Barry.....	MP 220	Brockmann, Klaus J.....	MP 003
Borchers, Christoph H.....	WP 449	Boykin, David.....	WP 284	Brockmann, Klaus J.....	MP 001
Borchers, Christoph H.....	MP 607	Boyle, Billy.....	TP 134	Brockmann, Klaus J.....	TP 071
Borchers, Christoph H.....	ThP 524	Bracamonte, Bianca.....	TP 041	Brockmann, Klaus J.....	TP 068
Borén, Mats.....	TP 592	Brachthaeuser, Yessica.....	TP 071	Brodbeck, Jennifer.....	WP 175
Borén, Mats.....	MP 505	Bradley, James.....	TP 030	Brodbeck, Jennifer.....	MP 234
Borgmann, Christopher.....	MP 108	Bradshaw, Robert.....	WP 194	Brodbeck, Jennifer.....	WP 029
Borisov, Roman.....	TP 340	Bradshaw, Robert.....	WP 197	Brodbeck, Jennifer.....	MP 627
Bornschein, Russell.....	ThOB am 08:30	Braga-Neto, Ulisses.....	MP 469	Brodbeck, Jennifer.....	WOE pm 2:50
Bornstein, Stefan R.....	WOC am 09:50	Brahim, Bessem.....	WP 068	Brodbeck, Jennifer.....	WP 028
Boronina, Tatiana N.....	TP 100	Bramwell-German, Claire.....	WP 519	Brodbeck, Jennifer.....	TP 047
Borotto, Nicholas.....	MP 628	Branch, Robert.....	MP 331	Brodbeck, Jennifer.....	WP 027
Borsani, Massimiliano.....	TP 649	Brand, Randall.....	TP 525	Brodbeck, Jennifer.....	ThP 451
Borton, Chris.....	TP 297	Brand, Sven.....	MP 506	Brodbeck, Jennifer S.....	TP 189
Borton, Christopher.....	MP 417	Brandin, Dominick.....	MOE am 08:50	Brodeur, Garrett.....	TP 452
Borton, Christopher.....	ThP 358	Brandt, Ulrich.....	ThP 688	Brodie, Eoin.....	WP 694
Borton, David.....	MP 031	Bransfield, Leslie.....	ThP 649	Broeckling, Corey.....	ThP 257
Borton, David.....	TP 289	Brant, Henry.....	TP 481	Bromirski, Maciej.....	WP 156
Boschi, Vanessa.....	WP 086	Braten, Miles.....	WP 638	Bromirski, Maciej.....	WOG pm 2:50
Boschmans, Jasper.....	TP 146	Braten, Miles.....	MP 668	Bromirski, Maciej.....	ThP 194
Boswell, Paul G.....	TP 209	Braun, Helene.....	MP 509	Bromirski, Maciej.....	TP 091
Both, Jean-Pierre.....	TOF pm 3:50	Braun, Thomas.....	MP 509	Broodman, Ingrid.....	ThP 650
Bothner, Brian.....	MOB pm 3:50	Braun, Thomas.....	ThP 411	Broodman, Ingrid.....	MP 681
Botre, Francesco.....	ThP 363	Bray, Fabrice.....	WP 640	Brooke, Dewey.....	MOB pm 3:50
Bouaziz, Moussa.....	ThP 071	Brechlin, Peter.....	MP 506	Brookhouse, Ian.....	WP 298
Boudreau, Amandine.....	MP 421	Breen, Lucas.....	ThOF pm 3:50	Brouns, Stan J.J.....	TP 156
Boudreau, Amandine.....	MP 419	Breitbach, Zachary S.....	MP 169	Brouwer, Hendrik-Jan.....	TP 210
Boudreau, Frank.....	ThP 073	Breitenfeldt, Martin.....	MP 108	Brown, Alex.....	WP 054
Boudreau, Nadine.....	TP 271	Breitkopf, Susanne.....	WP 395	Brown, Ann.....	WOF am 09:10
Boudreau, Nadine.....	ThP 469	Breitkopf, Susanne.....	MP 330	Brown, Brandee.....	ThP 602
Boudreau, Nadine.....	TP 268	Breitkreutz, Ashton.....	ThP 406	Brown, Geoffrey W.....	MP 200
Boudreau, Nadine.....	TP 258	Breitkreutz, Bobby-Joe.....	ThP 406	Brown, Geoffrey W.....	MP 199

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Brown, Jeffery M.....	ThOB pm 3:50	Bunch, Josephine.....	WP 169	Bystrom, Cory.....	Special 001
Brown, Jeffery M.....	WP 006	Bunch, Josephine.....	ThP 428	Bythell, Benjamin.....	MOC am 08:30
Brown, Jeffery M.....	MOB am 10:10	Bunch, Josephine.....	TP 414	Bythell, Benjamin J.....	WP 037
Brown, Jeffery M.....	WP 002	Bundy, Jake.....	MP 317	Byun, Jaeman.....	TP 199
Brown, Johnie.....	WP 116	Bunger, Maureen.....	WP 528	Byun, Jaeman.....	ThP 672
Brown, Johnie C.....	ThP 225	Bunger, Maureen K.....	WP 374	Cabecinha, Ashley.....	ThP 560
Brown, Joseph.....	TP 567	Bunger, Maureen K.....	Special 001	Cabovska, Baiba.....	MP 128
Brown, Joseph.....	MP 590	Bunk, David.....	MP 206	Cabral, Elaine Cristina.....	ThP 289
Brown, Lauren J.....	TP 134	Bunk, David M.....	ThP 649	Cabrera, Gabriela M.....	MP 127
Brown, Leonid.....	MOB pm 2:30	Bunkenborg, Jakob.....	TP 437	Cacas, Jean-Luc.....	MP 237
Brown, Leonid.....	TOD am 08:50	Bunkenborg, Jakob.....	MP 225	Cades, Jessica.....	TOF am 08:50
Brown, Lewis M.....	ThP 683	Burch, Heather L.....	TP 623	Caes, Guilherme AM.....	MP 380
Brown, Melisa.....	TP 301	Burden, Jonathan.....	MP 650	Caetano, Manuel.....	TP 287
Brown, Nancy.....	WP 157	Burden, Jonathan.....	MP 651	Cai, Hong.....	MOF am 09:30
Brown, Robert.....	ThP 337	Burden, Jonathan.....	MP 649	Cai, Qian.....	WP 466
Brown, Robert.....	MOE am 09:30	Burden, Jonathan.....	MP 647	Cai, Sheng-Suan (Victor).....	TP 031
Brown, Robert.....	ThP 340	Burden, Jonathan.....	MP 648	Cai, Sheng-Suan (Victor).....	MP 409
Brown, Simon H.J.....	MP 248	Burden, Jonathan.....	MP 646	Cai, Xianmei.....	WP 259
Brown, Steven R.....	MP 405	Buré, Corinne.....	MP 237	Cai, Xiaohan.....	ThP 174
Brown, Wayne.....	ThP 302	Burg, Maurice.....	ThP 528	Cain, Kelvin.....	ThP 590
Browne, David J.....	WP 101	Burg, Maurice M.....	WP 696	Cain, Teresa.....	MP 136
Browne, Shaynah.....	WP 542	Burgess, Jennifer.....	TP 094	Cakirli, R. Burcu.....	MP 108
Bruand, Jocelyne.....	TP 407	Burgess, Laurette.....	TP 589	Calame, Wim.....	MP 681
Bruand, Jocelyne.....	MOD pm 3:10	Burgess, Michael.....	TP 668	Calcutt, M. Wade.....	WP 683
Bruce, James.....	MP 105	Burgess, Michael.....	TOA am 10:10	Caldwell, Patricia.....	WP 193
Bruce, James.....	TOD pm 2:30	Burgis, Tim.....	ThP 300	Calkins, David.....	ThP 432
Bruce, James.....	MP 512	Burgoynes, Joseph.....	ThP 495	Callaghan, Anastasia.....	WOB pm 3:10
Brucker, Gerardo A.....	ThP 076	Buridon, Victor.....	WP 019	Callahan, John H.....	WP 570
Bruening, Merlin.....	WP 562	Buridon, Victor.....	ThP 051	Callahan, John H.....	MP 412
Bruening, Merlin L.....	WP 618	Buridon, Victor.....	WP 338	Callahan, John H.....	TP 042
Bruenner, Bernd.....	TP 281	Buridon, Victor.....	WP 066	Callahan, John H.....	WP 075
Bruenner, Bernd.....	MP 141	Buridon, Victor.....	ThP 028	Callahan, John H.....	MP 564
Bruley, Christophe.....	MP 683	Burkhardt, Mark.....	TOB am 09:10	Callister, Stephen J.....	MP 463
Brumbaugh, Justin.....	WP 463	Burkhart, Julia.....	ThP 398	Calverley, Richard.....	ThP 122
Brumbaugh, Justin.....	TP 086	Burkhart, Julia M.....	MP 460	Calverley, Richard.....	ThP 121
Brumbaugh, Justin.....	TP 461	Burkhart, Julia Maria.....	ThP 466	Camboni, Gabriella.....	WP 237
Brunelle, Alain.....	MP 295	Burlina, Fabienne.....	MP 478	Camenzind, Alex.....	TP 689
Brunelle, Alain.....	TP 016	Burlingame, A.L.....	WP 587	Camenzind, Alexander G.....	WP 642
Brunelle, Alain.....	WP 407	Burlingame, A.L.....	WOD am 09:30	Camenzind, Alexander G.....	ThP 587
Brunelle, Alain.....	ThP 269	Burlingame, A.L.....	ThP 483	Camenzind, Alexander G.....	WP 633
Brunelle, Alain.....	TOF pm 3:50	Burlingame, A.L.....	TP 440	Cameron, Chad.....	ThP 064
Brunelle, Alain.....	MOD pm 3:10	Burlingame, A.L.....	ThP 459	Cameron, Neil.....	TP 335
Brunner, Hermine.....	WP 599	Burns, Arielle.....	WP 568	Camp, David G.....	ThP 647
Brunnström, Åsa.....	MP 241	Burnum, Kristin.....	TP 141	Camp II, David.....	WOA pm 3:10
Brunson, Evangelyn.....	TP 010	Burnum, Kristin E.....	ThP 647	Camp II, David G.....	TP 160
Bruny, Guillaume.....	WP 066	Burow, Matthew.....	MP 675	Camp II, David G.....	TP 673
Bruny, Guillaume.....	WP 019	Burrell, Mike.....	WP 228	Campbell, Colin.....	MP 629
Brusniak, Mi-Youn.....	WP 505	Burrows, Erik.....	MP 424	Campbell, Curtis.....	ThP 358
Bryant, Barbara.....	TP 430	Burrows, Jon.....	ThP 525	Campbell, Curtis.....	TP 297
Bryant, Donald.....	MP 463	Burrows, Jon.....	WP 164	Campbell, Dave.....	ThOC pm 3:30
Bryant, K. Dawn.....	WP 279	Burton, Lyle.....	ThP 262	Campbell, David S.....	WP 505
Buch, Arnaud.....	MP 067	Burton, Lyle.....	ThP 295	Campbell, Elsie.....	MP 535
Buch, Shama.....	MP 331	Burton, Lyle.....	ThOG am 08:50	Campbell, Ian.....	WP 307
Buck, Robert.....	TOB pm 2:30	Burton, Lyle.....	WP 306	Campbell, J. Larry.....	WP 526
Buckenmaier, Stephan.....	ThP 570	Burton-Freeman, Britt.....	TP 098	Campbell, J. Larry.....	ThP 171
Buckholz, John.....	TP 276	Bush, David R.....	MP 659	Campbell, J. Larry.....	TOC pm 3:10
Buckholz, John E.....	MP 664	Bush, Matthew F.....	WOB pm 2:50	Campbell, J. Larry.....	ThP 472
Buckley, Anthony.....	WP 124	Bush, Matthew F.....	TP 137	Campbell, J. Larry.....	WP 120
Buco, Robert.....	ThP 332	Bushee, Jennifer.....	WP 112	Campbell, James.....	TP 686
Budayeva, Hanna.....	ThP 606	Busnel, Jean-Marc.....	TOG pm 4:10	Campbell, James.....	TP 675
Budde, Petra.....	MP 502	Butchard, Ken.....	MP 219	Campbell, James A.....	WP 233
Budhathoki-Uprety, Januka.....	MP 285	Butcher, Rebecca.....	ThP 236	Campbell, Marguerite.....	TP 115
Budin, Nicolas.....	WP 364	Butenas, Saulius.....	MP 229	Campos, Carl.....	ThP 436
Bugovsky, Stefan.....	ThP 157	Butler, Matias.....	MP 127	Campuzano, Iain D G.....	WOB pm 4:10
Buhmann, Joachim.....	MP 690	Butlin, Lorinda.....	TP 319	Campuzano, Iain D G.....	TP 137
Bui, Huy.....	WP 424	Butterer, Annika.....	WP 177	Campuzano, Iain D G.....	ThOB pm 3:50
Bukowski, Nick.....	TP 355	Butterfield, D. Allan.....	TP 606	Campuzano Jost, Pedro.....	MP 110
Bull, Gregory.....	WP 431	Butz, Andrea.....	ThP 205	Cannon, M. Kyle.....	ThP 182
Bulman, Amanda.....	ThP 149	Byers, Christopher.....	TP 308	Cannon, William.....	MP 463
Bulman, Amanda.....	MP 388	Byers, Helen L.....	TP 686	Cannon, Yvonne.....	MP 331
Bulovich, Sergey.....	TP 075	Bylda, Caroline.....	WP 159	Canon, Francis.....	WP 025
Bultema, Jelle B.....	TP 156	Bynum, Maggie.....	TP 183	Cantarel, Brandi.....	TP 621
Bulyanko, Yaroslava.....	MOA am 08:50	Bynum, Maggie.....	TP 129	Cantarel, Brandi L.....	ThOC pm 3:50
Bunch, Josephine.....	ThP 158	Bynum, Maggie A.....	ThP 571	Canterbury, Jesse D.....	TOE pm 3:50
Bunch, Josephine.....	ThP 429	Byrd, James F.....	TP 316	Canterbury, Jesse D.....	WP 600
Bunch, Josephine.....	WP 411	Byrd, John C.....	WP 595	Cantor, David.....	MP 288
Bunch, Josephine.....	TP 425	Bystrom, Cory.....	WP 163	Cao, Gang.....	MP 179

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Cao, Huachuan	MP 152	Carter, Davin	WP 456	Chait, Brian	WOG am 09:50
Cao, Jerry	WP 238	Carter, Melissa D.	WP 683	Chait, Brian	TP 547
Cao, Lei	TP 241	Carter, Spencer	ThP 470	Chait, Brian	MP 461
Cao, Lulu	ThOF pm 3:50	Carter, Spencer	MP 166	Chakel, John	WP 074
Cao, Zhijun	WP 639	Carter, Spencer	MP 162	Chakel, John	WP 330
Cao, Zhiyun	WP 641	Carter-Su, Christin	ThP 526	Chakrabarti, Atis	MP 198
Capacio, Benedict R.	MP 399	Caruso, Joseph	ThOE pm 3:30	Chakraborty, Asish	WOG am 09:10
Capelli, Laura	MP 367	Carvalho, Maria	ThP 280	Chakraborty, Asish	TP 169
Capka, Vladimir	MP 133	Carvalho, Valdemir M.	WP 158	Chakraborty, Asish	TP 121
Cappiello, Achille	TP 261	Carvalho, Valdemir M.	WP 154	Chalabi, Khaled	MP 679
Cappiello, Achille	WP 094	Carver, Jeremy	ThP 405	Chalfant, Charles	ThP 273
Cappozzo, Jack C.	TP 098	Casado-Izquierdo, Pedro	ThP 507	Chalkley, Robert	WOD am 09:30
Caprioli, Richard M.	WP 448	Casado-Izquierdo, Pedro	ThP 089	Chalkley, Robert	TP 440
Caprioli, Richard M.	WP 441	Casadonte, Rita	WP 440	Chalkley, Robert	MP 431
Caprioli, Richard M.	ThP 431	Cash, Patricia	TP 124	Chalmers, Michael	TP 480
Caprioli, Richard M.	WP 414	Cash, Patricia	ThP 486	Chalmers, Michael	TP 481
Caprioli, Richard M.	MOD am 08:50	Casiano, Madalis	TP 329	Chalmers, Michael J	MOB am 09:10
Caprioli, Richard M.	ThP 417	Caspar, Robert	ThP 644	Chalmers, Michael J	WP 555
Caprioli, Richard M.	WP 440	Cassady, Carolyn J	WP 487	Chalmers, Michael J	TP 479
Caprioli, Richard M.	WP 437	Cassady, Carolyn J	WP 490	Chalmers, Michael J	MOA am 10:10
Caprioli, Richard M.	WP 447	Cassady, Carolyn J	TP 187	Chamberlain, Stan	WP 279
Caprioli, Richard M.	MOD pm 4:10	Cassady, Carolyn J	WP 489	Chambers, Andrew	TOG pm 3:50
Caprioli, Richard M.	TP 416	Cassou, Catherine A.	MOB am 09:30	Chambers, Erin	ThP 636
Caprioli, Richard M.	ThP 438	Castellana, Natalie E	ThP 405	Chambers, Erin	ThP 119
Caprioli, Richard M.	WP 157	Castellana, Natalie E	MOE pm 2:50	Chambers, Erin	WP 103
Caprioli, Richard M.	TP 415	Castellino, Stephen	ThP 422	Chambers, Erin E.	WP 141
Caraiman, Doina	WP 214	Castellino, Steve	TOF pm 2:30	Chambers, Erin E.	MOG am 09:10
Caraiman, Doina	TP 135	Castellino, Steve	TOF pm 3:30	Chambers, Matthew	TP 382
Caraiman, Doina	ThP 171	Castro, Sergio	TP 499	Chambert, Stéphane	WOG pm 3:10
Caraiman, Doina	WP 120	Castro-Gómez, Fernando	MP 060	Chambers, Angela	MP 671
Caraiman, Doina	WP 327	Castro-Perez, Jose	WP 665	Chambreaux, Steven	TP 303
Carapito, Christine	WP 505	Catherman, Adam	TP 553	Chamkasem, Narong	MP 413
Carbone, David P.	WP 440	Catherman, Adam	ThOD am 09:10	Chamot-Rooke, Julia	WP 488
Cardamone, John	TP 628	Catherman, Adam D.	WOA am 10:10	Chamot-Rooke, Julia	WP 503
Cardasis, Helene	ThP 206	Catlin, Aaron	WP 373	Champion, Kathy	ThP 163
Cardenas, Johnny	MP 146	Catrina, Anca	TP 659	Champion, Matthew	TP 391
Cardenas, Johnny	WP 092	Catron, Brittany	ThOE pm 3:30	Chan, ChangChing	MP 168
Cardenas, Johnny	MP 145	Cauchon, Nina	TP 109	Chan, Diana L.	MP 673
Cardozo, Karina Helena M.	WP 154	Cavestro, Martina	TP 683	Chan, Doug W.	MOA am 08:50
Cardozo, Karina Helena M.	WP 158	Cayouette, Michelle	MP 553	Chan, Eric	TP 430
Carey, Patricia	MP 531	Cazares, Lisa H.	MOD am 09:10	Chan, Eric Y.	TP 630
Cargile, Benjamin	WP 374	Cazenave-Gassiot, Amaury	MP 272	Chan, Lawrence C B.	WP 522
Carlage, Tyler D.	TP 632	Ceailles Flarakos, Caroline	TP 312	Chan, Robin B.	MP 256
Carlson, Ross P.	WP 428	Cefalu, William T.	TP 614	Chan, William W. L.	WP 325
Carlson, Timothy	WP 143	Cekic, Vera	TP 274	Chan, Yi-Tsu	ThOC am 09:10
Carlton, Doug	WP 332	Çelikbiçak, Ömür	MP 482	Chana, Antonio	MP 131
Carlton, Doug	MP 526	Celiz, Mary Dawn	ThOG am 10:10	Chance, Deborah	MP 075
Carlton, Doug D.	WP 335	Cemic, Franz	ThP 411	Chance, Mark	WP 561
Carnell, Lisa	TP 709	Centola, Paolo	MP 367	Chance, Mark	MP 632
Carolan, Vikki	WP 444	Cerda, Edison	WP 204	Chance, Mark	TP 550
Carolan, Vikki	WP 194	Cereda, Roberta	WP 237	Chance, Mark	TP 705
Caron-Lizotte, Olivier	ThP 516	Cerny, Ronald L.	WP 593	Chance, Mark	MP 640
Carr, Elizabeth	TOG pm 3:10	Cerny, Thomas	MP 690	Chance, Mark	ThP 695
Carr, Kenneth	ThP 691	Ceroni, Alessio	WP 303	Chance, Mark	TP 543
Carr, Peter W.	TP 209	Cerqueira, José R.	TP 306	Chance, Mark	MP 642
Carr, Steven A.	WP 523	Cersoy, Sophie	WP 407	Chance, Mark	WP 510
Carr, Steven A.	WP 635	Cezar, Gabriela G.	ThP 234	Chance, Mark	MP 098
Carr, Steven A.	TOA am 08:50	Cha, Sangwon	ThP 597	Chance, Mark	TOD am 10:10
Carr, Steven A.	TP 688	Cha, Sangwon	TP 697	Chance, Mark	ThP 679
Carr, Steven A.	TOA am 10:10	Chace, Donald H.	WP 672	Chance, Mark R.	WOG am 10:10
Carr, Steven A.	MP 598	Chacko, Balu	ThP 673	Chandan, Vandana	MP 545
Carr, Steven A.	TP 668	Chacko, Silvi	WP 071	Chandler, Kevin B.	ThP 579
Carr, Steven A.	WP 507	Chacon, Almary	TP 117	Chandonia, John-Marc	TP 570
Carr, Steven A.	MP 656	Chaerkady, Raghothama	TP 617	Chandonia, John-Marc	WP 608
Carr, Steven A.	TP 645	Chaerkady, Raghothama	TP 638	Chang, Benny Hung-Junn	WP 522
Carr, Steven A.	ThP 500	Chaerkady, Raghothama	TP 622	Chang, Caren	MOE pm 3:50
Carr, Steven A.	ThP 684	Chaerkady, Raghothama	ThP 689	Chang, Ching-Yun	TP 698
Carrano, Anna	WP 433	Chaerkady, Raghothama	ThP 521	Chang, Chun-Chao	MP 684
Carraro, Silvia	WP 227	Chaerkady, Raghothama	ThP 696	Chang, Hsueh-Chia	ThOG pm 3:10
Carreira, Erick	ThOD am 09:30	Chaerkady, Raghothama	WP 693	Chang, James	MP 402
Carrier, Alain	MP 254	Chaerkady, Raghothama	WP 695	Chang, Jeanne S.	TP 110
Carrington, Stephen	ThP 564	Chaerkady, Raghothama	WP 461	Chang, Jung-Shan	MP 684
Carroll, Karen	MP 552	Chaerkady, Raghothama	ThP 697	Chang, Kai-Chih	MP 548
Carstens, Carsten	MP 553	Chaikuad, Apirat	MOB pm 4:10	Chang, Kung-Yen	TP 385
Carter, Claire	ThP 158	Chainet, Fabien	TP 299	Chang, Matt S.	WP 199
Carter, Claire	ThP 428	Chainet, Fabien	TP 298	Chang, Max	WP 379
Carter, Davin	ThP 448	Chait, Brian	WP 544	Chang, Min	WP 012

INDEX OF AUTHORS

Chang, Po-Chih.....	WP 530	Chen, Dawn.....	ThP 603	Chen, Yet-Ran	WP 387
Chang, Sin-Yi.....	WP 530	Chen, Emily.....	TP 631	Chen, Yi-chen	TP 713
Chang, Wei-Hung.....	ThP 389	Chen, Eric S.-W.	ThP 505	Chen, Yi-Ju.....	ThP 632
Chang, Wei-Hung.....	WP 387	Chen, Genfu.....	MP 174	Chen, Yi-Ju.....	ThP 631
Chang, Yan Zin	ThP 369	Chen, Guodong.....	TP 483	Chen, Yi-Ju.....	TP 378
Chang, Yan Zin	ThP 368	Chen, Guodong.....	TP 102	Chen, Ying-Lan	WP 217
Chang, Yan-Zin.....	ThP 375	Chen, Hao.....	ThP 031	Chen, Ying-Lan	MP 496
Chang, Yan-Zin.....	ThP 378	Chen, Hao.....	WOC pm 3:30	Chen, Yi-Ting.....	WP 509
Chang, Yan-Zin.....	ThP 370	Chen, Hao.....	WP 539	Chen, Yi-Ting.....	WP 300
Chang, Yen-Ching	MP 609	Chen, Hao.....	ThP 548	Chen, Yong.....	ThP 126
Chang, Yuan-Jhe.....	ThP 375	Chen, Hao.....	ThOG pm 3:30	Chen, Yong.....	TP 448
Chang, Yuan-Jhe.....	ThP 378	Chen, Hauh-Jyun Candy	TP 311	Chen, Yoryu	ThP 436
Chang, Yuan-Jhe.....	ThP 370	Chen, Hsiang-Ju.....	TP 574	Chen, Yu.....	WP 034
Chang, Yu-Ling.....	TP 166	Chen, Hsiao-Wei	WP 509	Chen, Yuan-Shek.....	WP 239
Chang, Yu-Sun	WP 509	Chen, Hsi-Chuan	WP 302	Chen, Yue	MOA pm 3:10
Chang-Wong, Tony.....	WP 639	Chen, Hsin-Chang	MP 378	Chen, Yue	TP 436
Chanthamontri, Chamnongsak	WP 618	Chen, Hsuan-Shen.....	MP 528	Chen, Yu-Ju.....	TP 264
Chanthaphaychith, Siprachanh	TP 566	Chen, Hung Yin.....	ThP 369	Chen, Yu-Ju.....	ThP 632
Chao, Alex	ThP 523	Chen, I-Hsuan	ThP 686	Chen, Yu-Ju.....	TP 378
Chao, Weilun	MP 018	Chen, Jenn-Han	ThP 632	Chen, Yu-Ju.....	ThP 631
Chao, Weilun	ThP 445	Chen, Jia.....	MP 390	Chen, Yu-Ju.....	WP 473
Chapman, John D.....	MP 587	Chen, Jianzhong.....	ThP 277	Chen, Yu-Ju.....	ThP 686
Chapman, John D.....	MP 203	Chen, Jianzhong.....	ThP 547	Chen, Yu-Ju.....	TP 309
Chapman, Kent.....	WP 451	Chen, Jiawei.....	MP 630	Chen, Yu-Ju.....	MP 485
Chappell, Todd.....	TP 280	Chen, Jie.....	WP 689	Chen, Yung-Hsiang	MP 195
Chappell, William	ThP 073	Chen, Jinn-Shiun.....	ThP 632	Chen, Yung-Lin	ThP 114
Chapple, Iain.....	TP 456	Chen, Jinwen.....	WP 099	Chen, Zhuo	MP 524
Charlebois, Jay	TP 112	Chen, Lee Chuin.....	TP 054	Chenau, Jérôme	MP 389
Charles, Laurence	TP 337	Chen, Lee Chuin.....	TP 062	Chendo, Christophe	TP 338
Charles, Laurence	TP 338	Chen, Lee Chuin.....	TP 064	Chendo, Christophe	TP 339
Charles, Laurence	WP 062	Chen, Lee Chuin.....	TP 061	Chendo, Christophe	WP 062
Charles, Laurence	TP 013	Chen, Lian.....	WP 274	Cheng, Bin	TP 548
Charles, Laurence	WP 039	Chen, Liuxi.....	ThP 558	Cheng, Chien-Chung	WP 219
Charles, Laurence	ThOC am 09:30	Chen, Long.....	MP 518	Cheng, Chun-Chia	MP 684
Charles, Laurence	TP 339	Chen, Lu.....	MP 565	Cheng, Chu-Nian	MP 035
Charlesworth, M. Cristine	TP 650	Chen, Ning.....	MP 614	Cheng, Chunru.....	WP 347
Charlesworth, Michael	MP 547	Chen, Ping.....	TP 234	Cheng, Hua	TOC pm 3:30
Charmont, Stephane.....	MOG pm 3:30	Chen, Qiuying.....	ThP 247	Cheng, John	MP 136
Charvat, Ales.....	WOE am 10:10	Chen, Ru.....	ThP 677	Cheng, S.-W. Grace	ThP 618
Charvat, Ales.....	MP 049	Chen, Rui.....	ThP 319	Cheng, Stephen	TP 131
Chase, George.....	TP 333	Chen, Ruiqiang	MOE pm 2:30	Cheng, Sy-Chyi.....	MP 076
Chatfield, Dale.....	ThP 098	Chen, Ruiqiang	MOE pm 3:50	Cheng, Wen-Shuo	ThP 041
Chatfield, Peggy.....	ThP 098	Chen, She.....	TOD am 09:10	Cheon, Ji-hye	ThP 489
Chatragadda, Hemasudha.....	WP 679	Chen, Shu-Hua.....	ThP 554	Cheon, Mi Hee	TP 672
Chaturvedi, Kaveri.....	ThP 335	Chen, Shun-Yuan	MP 488	Chepanoske, Cindy	MP 585
Chaturvedi, Prasoon	ThP 185	Chen, Siyuan.....	WP 709	Chepelev, Iouri	TP 433
Chaudhuri, Shubhra.....	WP 664	Chen, Songming	MP 662	Cherepanov, Ivan	ThP 531
Chavez, Juan.....	TOD pm 2:30	Chen, Tao.....	ThOF pm 3:30	Chernookiy, Dmitriy	ThP 030
Chavez, Juan.....	MP 512	Chen, Tsung-Chi	ThP 036	Chernushevich, Igor.....	MP 596
Chawner, Ross.....	WOB am 08:50	Chen, Wangxue.....	MP 545	Chernushevich, Igor V.....	WP 536
Chawner, Ross.....	MP 451	Chen, Wanxian	TP 234	Chervet, Jean-Pierre	WP 189
Che, Fa-Yun	TP 587	Chen, Wei.....	ThP 576	Chervet, Jean-Pierre	TP 210
Che, Fa-Yun	WP 609	Chen, Wei.....	TP 519	Chervet, Jean-Pierre	WP 617
Cheema, Amrita K.....	WP 392	Chen, Weibin	WOF pm 3:50	Chesnik, Marla	WP 709
Cheerathodi, Mujeeburahiman.....	TP 602	Chen, Weibin	TP 121	Chess, Edward K.	TP 117
Cheetham, Janet.....	TP 109	Chen, Weibin	WOG am 09:10	Chess, Edward K.	TP 188
Chelbi-Alix, Mounira K.....	ThP 499	Chen, Weibin	TP 169	Cheung, Tommy K.	ThP 656
Chellarajan, Lynn.....	TP 589	Chen, Weibin	ThP 637	Cheung, Allan Shi Chung	ThP 452
Chelsky, Daniel	ThP 691	Chen, Weibin	ThP 573	Chevolleau, Sylvie	WP 072
Chemali, Magali.....	ThP 648	Chen, Weibin	ThP 636	Chi, An	ThOA am 08:50
Chen, Buyun	MP 310	Chen, Weiqing	TP 234	Chi, An	MP 667
Chen, Buyun	TP 237	Chen, Wenzhang	MP 479	Chi, Hao.....	WP 404
Chen, Cai.....	WP 598	Chen, Xi.....	WP 671	Chi, Hao.....	WP 073
Chen, Cai Yun.....	MP 612	Chen, Xi.....	WP 126	Chi, Hao.....	ThOA am 09:10
Chen, Chao-Jung.....	MP 549	Chen, Xian	MP 205	Chiang, Meng Han	ThP 370
Chen, Chien-Hsun	TP 034	Chen, Xian	WP 498	Chiang, Vincent L.	WP 302
Chen, Chien-Lun	WP 300	Chen, Xian	WP 701	Chiarelli, M. Paul	TOB pm 3:50
Chen, Chien-Lun	WP 509	Chen, Xiaobing	TP 548	Chiaro, Sandra Shirley Ximeno	TP 291
Chen, Chien-Shing	TP 712	Chen, Xiaoyuan.....	ThP 588	Chichlowski, Maciej.....	ThOD am 09:50
Chen, Chi-Hsin.....	MP 492	Chen, Xiulan.....	ThP 588	Chick, Joel.....	TP 591
Chen, Chih-Yuan	MP 044	Chen, Y.....	ThP 003	Chien, Allis	ThP 304
Chen, Chun-Chi	MP 076	Chen, Y. Ann	ThP 238	Chien, Allis S.	MP 292
Chen, Chung-Hsuan.....	TP 330	Chen, Yanfeng	TOC pm 2:50	Chien, Ellen Y. T.....	MOA am 10:10
Chen, Chung-Hsuan.....	TP 166	Chen, Yawen	TP 705	Chien, Ko-Yi	ThP 513
Chen, Chungwen.....	WP 273	Chen, Yet-Ran	WP 217	Chimi, Marthe.....	ThP 688
Chen, Chung-Yu.....	TP 324	Chen, Yet-Ran	ThP 389	Chin, Alice.....	ThP 629
Chen, Chun-Wei.....	MP 548	Chen, Yet-Ran	MP 496	Chinello, Clizia.....	TP 649

INDEX OF AUTHORS

Ching, Wei-Chieh	ThP 631	Chu, Ivan Keung	ThP 452	Clench, Malcolm	WP 197
Ching, Wei-Chieh	ThP 632	Chu, Ivan Keung	WP 484	Cleven, Curtis D.	TP 341
Chingin, Konstantin	TP 303	Chubaty, Nicholas	TP 065	Clevers, Hans	TOG am 09:30
Chingin, Konstantin	TP 046	Chughtai, Kamila	MOD pm 3:50	Clifford-Nunn, Billy	WOA am 09:10
Chirinos, José	TP 287	Chughtai, Kamila	WP 446	Clinton, Steven	MP 325
Chisholm, Jeff	WP 519	Chughtai, Sanaullah	WP 446	Clinton, Steven K.	ThP 601
Chitranshi, Priyanka	WP 186	Chughtai, Sanaullah	ThOA pm 2:30	Clough, Tim	TP 698
Chitta, Raghu K	TP 493	Chundawat, Shishir	TP 192	Clouse, Steven	MOE pm 2:30
Chlenov, Anatoly	ThP 327	Chung, Joo Hee	ThP 682	Clouser-Roche, Andrea	ThP 213
Chmelik, Josef	MP 606	Chung, Ting	WP 509	Coates, Steve	WP 228
Cho, Inhee	MP 160	Churanova, Tatiana S.	WOF pm 4:10	Cobb, Jennifer S.	MP 562
Cho, JooYoun	WP 264	Churley, Melissa	WP 316	Cochran, Jack	ThP 358
Cho, Joo-Youn	WP 247	Chuyeh, Sun-Chong	ThP 366	Cocks, Elizabeth	TP 083
Cho, Joo-Youn	WP 245	Ciavarini, Steve	ThP 021	Cody, Robert B.	TP 345
Cho, Joo-Youn	WP 246	Ciborowski, Pawel	TP 601	Cody, Robert B.	MP 135
Cho, Joo-Youn	WP 244	Ciborowski, Pawel	WP 568	Cody, Robert B.	TP 044
Cho, Kun	TP 577	Ciccimaro, Eugene F.	WP 686	Coelho, Fernando	WP 020
Cho, Kyung Hee	MP 155	Ciccimaro, Eugene F.	TP 603	Coelho, Mirela B.	MP 040
Cho, Kyung Hee	ThP 173	Cichelli, Julie	WP 558	Coelho, Mirela Batista	ThP 289
Cho, William Chi-Shing	TP 596	Cichelli, Julie	WP 556	Coffey, Laura	TOB am 09:10
Cho, Wonryeon	MP 668	Cichon, Eugene	TP 452	Coffey, Robert J.	MP 693
Cho, Wonryeon	ThP 567	Cífková, Eva	ThP 294	Coffman, Alex	MP 323
Cho, Wonryeon	TP 521	Cilia, Michelle	ThP 306	Coggin, Andrew	ThP 278
Cho, Yi-Tzu	MP 033	Cilia, Michelle	ThP 307	Cohen, Isaac	MP 183
Cho, Young-Eun	TP 309	Cillero Pastor, Berta	WP 434	Cohen, Isaac	ThP 318
Cho, Yunju	ThP 342	Cillero Pastor, Berta	WP 446	Cohen, Isaac	WP 098
Choi, Bernard	WOF am 08:30	Cillero-Pastor, Berta	ThOA pm 2:30	Cohen, Jerry	MP 335
Choi, Cheol-Ho	TP 017	Cima, Igor	MP 690	Cohen, Jerry D.	TP 209
Choi, Hoon	MP 070	Cimino, Nicola	MP 403	Cohen, Jerry D.	TP 193
Choi, Hyungwon	MP 610	Cipollo, John F.	ThP 575	Cohen, Jerry D.	ThP 241
Choi, Jaewon	WP 326	Cirillo, Lisa	ThP 619	Cohen, Lucinda	MOG pm 2:50
Choi, Jong-Soon	TP 577	Cirillo, Lisa	WP 709	Cohen, Lucinda	MP 528
Choi, Jung-Suk	WOB pm 3:30	Claassen, Manfred	WP 515	Cohen, Lucinda	WOF am 08:30
Choi, Megan	WP 608	Claassen, Manfred	WP 583	Cohen, Richard A.	ThP 495
Choi, Myoung Choul	ThP 072	Claassen, Manfred	ThOC pm 3:30	Cohen, Richard A.	TP 653
Choiniere, John	MP 341	Claesson, Hans-Erik	MP 241	Cohen, Steven A.	MOB pm 3:30
Choksawangarn, Waeowalee	TP 573	Clark, Daniel	ThP 481	Cohen, Steven L.	ThP 150
Choodnovskiy, Naomi	TP 668	Clark, David A.	ThP 088	Cojocar, Laura	MP 172
Choodnovskiy, Naomi	WP 507	Clark, Kenzi	MP 555	Colamonici, Cristiana	ThP 363
Choodnovskiy, Naomi	ThP 684	Clark, Kimberly	WP 129	Colangelo, Christopher	Special 002
Choolani, Mahesh	ThP 260	Clark, Kimberly	WP 130	Colantonio, Simona	ThP 414
Chordia, Mahendra D.	TP 218	Clark, Philip	ThP 644	Colbeck, Jeffrey	TP 715
Chornoguz, Olesya	ThP 654	Clark, Susan	TP 375	Cole, Callie	WP 023
Chou, Chien-Cheng	ThP 631	Clarke, Amy	ThOB am 09:50	Cole, Christina	MP 134
Chou, Hsiao-Chiao	ThP 632	Clarke, David J.	TP 559	Cole, Daniel	ThP 340
Chou, Judy H.	TP 108	Clarke, John	MP 325	Cole, F. Sessions	TP 670
Chou, Kao-Yu	ThP 631	Clarke, Neil	MP 272	Cole, Jacquelyn	WP 598
Chou, Szu-Wei	TP 073	Clarke, Nigel	WP 163	Cole, Laura	WP 444
Chou, Wayne	ThP 514	Clarke, Philip	MOG pm 3:50	Cole, Regina	ThP 619
Chou, Wayne	TP 700	Clarke, Stephen	TP 252	Cole, Regina	WP 709
Chou, Wayne	WP 044	Clarke, Steven G.	ThP 478	Cole, Richard B.	MP 246
Choudhary, Jyoti	MP 536	Clarkson, Edward	TP 308	Cole, Richard B.	MP 544
Chourey, Karuna	MP 214	Classon, Robert	WP 208	Cole, Richard B.	ThP 496
Chourey, Karuna	MP 532	Claude, Emmanuelle	WP 432	Cole, Richard B.	TP 009
Chow, Lu-Ping	MP 609	Claude, Emmanuelle	WP 444	Cole, Robert	ThP 029
Chowdhury, Saiful M.	TP 652	Claude, Emmanuelle	TP 148	Cole, Robert N.	TP 100
Chowdhury, Swapn	TP 231	Clausen, Per A.	MP 027	Cole, Roderic	WP 682
Chowdhury, Swapn K.	ThOF pm 2:30	Clausen, Per Axel	MP 026	Cole, Roderic	MP 174
Chramow, Alexander	MP 052	Clauser, Karl R.	TP 386	Cole, Roderic	WOF am 09:50
Christensen, Mark	ThP 219	Clauser, Karl R.	TOA am 08:50	Cole, Scott	WP 008
Christians, Uwe	MP 183	Clauser, Karl R.	WP 507	Cole, Timothy	TP 715
Christians, Uwe	ThP 318	Clauser, Karl R.	ThP 684	Coley, William	TP 655
Christians, Uwe	WP 098	Clauser, Karl R.	MP 431	Colgrave, Michelle	MP 582
Christiansen, Michael	WP 350	Clauss, Therese	WOA pm 3:10	Colgrave, Michelle	ThP 331
Christianson, Chad	ThP 095	Cleaves, Henderson James	TP 144	Colizza, Kevin	TP 230
Christianson, Chad	TP 238	Clemencon, Benjamin	TP 572	Colizza, Kevin	TP 229
Christie, Steven	MP 060	Clemmer, David E.	TOE pm 2:30	Colla, Jennifer	WOC pm 3:30
Chu, Caroline S.	WP 381	Clemmer, David E.	MP 057	Collier, Timothy S.	MP 519
Chu, Caroline S.	WP 505	Clemmer, David E.	TP 142	Collier, Timothy S.	TP 527
Chu, Fong Lam	ThP 252	Clemmer, David E.	TP 145	Collings, Bruce	WP 526
Chu, Ivan K.	WP 482	Clemmer, David E.	ThP 043	Collin-Hansen, Christian	ThP 356
Chu, Ivan K.	WP 325	Clemmer, David E.	WOB am 10:10	Collin-Hansen, Christian	ThP 355
Chu, Ivan K.	WP 485	Clench, Malcolm	WP 412	Collins, Leonard	WP 675
Chu, Jinfang	MP 653	Clench, Malcolm	WP 432	Collins, Terrence J.	WP 313
Chu, Lichieh Julie	MP 439	Clench, Malcolm	WP 444	Cologna, Stephanie M.	ThP 690
Chu, Rosalie	MP 099	Clench, Malcolm	WP 422	Cologna, Stephanie M.	ThP 546
Chu, YanQiu	ThP 457	Clench, Malcolm	WP 194	Colognato, Holly	TP 631

INDEX OF AUTHORS

Colquhoun, David.....	TP 626	Coon, Joshua J.....	ThP 050	Cotter, Robert J.....	ThP 503
Colquhoun, David R.....	ThP 611	Coon, Joshua J.....	TOE pm 3:10	Cotter, Robert J.....	TP 434
Colsch, Benoit.....	ThP 272	Coon, Joshua J.....	ThP 519	Cotter, Robert J.....	ThP 074
Colsch, Benoit.....	ThP 427	Coon, Joshua J.....	TP 086	Cotter, Robert J.....	ThP 027
Colsch, Benoit.....	WP 431	Coon, Joshua J.....	WP 011	Cotter, Robert J.....	MP 067
Colucci, Wilson.....	TP 653	Coon, Joshua J.....	WP 620	Cotter, Robert J.....	ThP 502
Colvin, Anita.....	TP 114	Coon, Joshua J.....	WP 463	Cotter, Robert J.....	WP 520
Colwill, Karen.....	WP 527	Coon, Joshua J.....	ThP 014	Countryman, Sky.....	TP 314
Colwill, Karen.....	WP 706	Coon, Joshua J.....	ThOE am 08:50	Courant, Frédérique.....	TP 363
Colwill, Karen.....	ThP 406	Coon, Joshua J.....	TP 564	Courcelles, Mathieu.....	ThP 499
Colwill, Karen.....	MP 202	Coon, Joshua J.....	MP 572	Court, Donald L.....	MP 612
Combe, Peter C.....	ThP 135	Coon, Joshua J.....	MOC am 08:50	Court, Magali.....	MP 683
Comberg, Ute.....	MP 453	Coon, Joshua J.....	ThP 522	Courtiade, Marion.....	TP 299
Commoner, Lucy.....	ThP 332	Cooper, Brandon.....	MP 262	Courtiade, Marion.....	TP 298
Compton, Philip.....	WP 090	Cooper, Bret.....	MOE pm 3:50	Cousins, Lisa M.....	MP 401
Compton, Philip.....	MP 595	Cooper, Dan.....	TP 355	Cousins, Lisa M.....	TP 058
Comstock, Kate.....	ThP 198	Cooper, Helen.....	WP 169	Couts, Kasey.....	MP 658
Comstock, Kate.....	TOB am 08:50	Cooper, Helen.....	WP 491	Covaci, Adrian.....	MP 242
Comstock, Kate.....	MOF pm 3:50	Cooper, Helen.....	TP 151	Covey, Thomas.....	MP 052
Conard, Kevin R.....	ThP 234	Cooper, Helen.....	TP 456	Covey, Thomas.....	ThP 096
Conda-Sheridan, Martin.....	WP 274	Cooper, Helen.....	TP 425	Covey, Thomas.....	MP 037
Conde-Vancells, Javier.....	ThP 614	Cooper, Michael K.....	WP 683	Covey, Thomas.....	MP 051
Condron, Margaret.....	MP 632	Cooper, Theresa.....	ThOE pm 4:10	Covey, Thomas.....	MP 058
Cong, Feng.....	MOA am 09:50	Cooper, Vance.....	ThP 110	Covey, Thomas.....	MP 436
Conlin, Brian.....	ThP 305	Cordwell, Stuart.....	ThP 413	Covey, Thomas R.....	WOB am 09:30
Conlon, Frank.....	MP 619	Coresh, Josef.....	WP 511	Covey, Thomas R.....	ThP 471
Conlon, J. Michael.....	WP 504	Corilo, Yuri E.....	TP 291	Coward, Lori.....	WP 261
Conlon, Kimberly A.....	TP 322	Corilo, Yuri E.....	TP 304	Coward, Lori.....	WP 265
Connelly, John.....	TP 562	Corilo, Yuri E.....	TP 306	Cowin, James.....	TP 422
Connolly, Joanne B.....	ThP 593	Cormack, Kathleen A.....	MOG pm 2:30	Cox, Brian.....	WP 431
Connolly, Joanne B.....	ThP 590	Cornelison, Christopher.....	TOB am 08:30	Cox, David.....	ThOG am 08:50
Connolly, Yvonne.....	MP 580	Cornett, Shannon.....	WP 418	Cox, David.....	MP 024
Connon, Stephanie.....	MP 214	Cornett, Shannon.....	TP 403	Cox, David.....	MP 421
Connors, Lawreen H.....	TP 597	Cornett, Shannon.....	MOD am 08:50	Cox, David.....	MP 419
Conrad, Charles A.....	MP 287	Cornett, Shannon.....	ThP 422	Cox, David.....	MP 037
Conrad, Gary.....	WP 445	Cornett, Shannon.....	ThOF am 09:50	Cox, James.....	MP 323
Contrepolis, Kevin.....	TP 432	Corpuz, April.....	MP 011	Cox, Juergen.....	WP 082
Contreras, Carlo M.....	MP 685	Corr, Jay.....	ThP 096	Cox, Juergen.....	TP 706
Contreras, Cesar.....	MOC pm 2:30	Corr, Jay J.....	ThP 471	Coy, Stephen L.....	ThP 376
Contreras, Cesar.....	WP 018	Corrier, Kristen.....	TP 621	Coy, Stephen L.....	WOB am 09:30
Conway, James.....	TP 693	Cortina, Niña.....	WP 305	cozma, Claudia.....	TOF am 08:30
Conway, Michael.....	MP 481	Costa, Anthony.....	MP 045	Cozzolino, Rosaria.....	MP 671
Conwell, Darwin.....	WP 659	Costa Pereira, Jorge.....	WP 257	Crabbe, Bryan.....	ThOC pm 2:50
Cook, Aaron.....	MP 473	Costa Simas, Rosineide.....	TP 291	Craft, David.....	MP 665
Cook, Jeremy.....	WP 101	Costa Simas, Rosineide.....	MP 042	Craik, David.....	MP 582
Cook, Jeremy.....	TP 252	Costa Vera, Cesar.....	ThP 595	Craik, David.....	ThP 331
Cook, Kevin.....	TP 082	Costa Vera, Cesar.....	MP 599	Crain, Andrew.....	WOA pm 3:50
Cook, Shannon.....	WP 040	Costantino, Nina.....	MP 612	Cramer, Rainer.....	ThP 300
Cook, Shannon.....	WP 007	Costello, Catherine E.....	WP 014	Cramer, Rainer.....	WP 435
Cooks, Graham.....	TP 283	Costello, Catherine E.....	ThP 580	Crampton, Kevin T.....	ThOB am 09:10
Cooks, R. Graham.....	ThP 424	Costello, Catherine E.....	ThP 666	Crane, Ashley.....	ThP 278
Cooks, R. Graham.....	MP 048	Costello, Catherine E.....	TP 179	Crasto, Chiquito.....	WP 402
Cooks, R. Graham.....	MP 045	Costello, Catherine E.....	TP 443	Crawford, Elizabeth.....	TP 078
Cooks, R. Graham.....	TP 019	Costello, Catherine E.....	ThP 495	Crawford, Elizabeth.....	TP 026
Cooks, R. Graham.....	WP 442	Costello, Catherine E.....	MP 235	Crawford, Elizabeth.....	TP 043
Cooks, R. Graham.....	TP 018	Costello, Catherine E.....	MP 484	Crawford, Matthew.....	TOG am 09:50
Cooks, R. Graham.....	WOB am 09:10	Costello, Catherine E.....	ThOE pm 3:10	Crawford, Matthew.....	WP 105
Cooks, R. Graham.....	TOB pm 4:10	Costello, Catherine E.....	TP 653	Crawley, Lindsey R.....	ThP 377
Cooks, R. Graham.....	WOC pm 3:30	Costello, Catherine E.....	MP 282	Creaser, Trevor.....	TP 495
Cooks, R. Graham.....	TP 076	Costello, Catherine E.....	ThP 600	Creaser, Colin.....	ThP 037
Cooks, R. Graham.....	ThOG pm 2:50	Costello, Catherine E.....	ThP 607	Creaser, Colin S.....	MP 060
Cooks, R. Graham.....	MP 046	Costello, Catherine E.....	ThP 388	Crease, Andrew.....	TP 134
Cooks, R. Graham.....	WP 452	Costello, Catherine E.....	TP 597	Crease, Andrew.....	TP 151
Cooks, R. Graham.....	TP 288	Costello, Catherine E.....	MP 280	Crease, Andrew.....	TP 456
Cooks, R. Graham.....	ThP 073	Costello, Catherine E.....	ThP 660	Cretton-Scott, Erika.....	WP 265
Cooks, R. Graham.....	TOF am 09:50	Costello, Catherine E.....	MP 247	Cretton-Scott, Erika.....	WP 261
Cooks, R. Graham.....	TP 035	Costello, Catherine E.....	ThOA pm 3:30	Crick, Dean C.....	MP 018
Cooks, R. Graham.....	MP 047	Cosulich, Sabina.....	ThP 507	Crick, Dean C.....	ThP 445
Cooks, R. Graham.....	TP 057	Cote, Linda.....	MP 351	Crispin, Matt.....	ThP 230
Cooks, R. Graham.....	WOC pm 2:30	Côté, Cynthia.....	MP 144	Crispin, Max.....	MP 290
Cooks, Robert Graham.....	TP 034	Côté, Cynthia.....	MP 142	Cristea, Ileana M.....	ThP 592
Coolen, Lique.....	TP 219	Cotta, Michael.....	MP 293	Cristea, Ileana M.....	MP 619
Coon, Joshua.....	WP 015	Cottarel, Guillaume.....	TP 715	Cristea, Ileana M.....	MP 620
Coon, Joshua J.....	TP 400	Cotter, David.....	WP 257	Cristea, Ileana M.....	ThP 606
Coon, Joshua J.....	TP 461	Cotter, Robert.....	TP 690	Cristea, Ileana M.....	MP 621
Coon, Joshua J.....	MOA am 09:10	Cotter, Robert.....	ThP 603	Cristea, Ileana M.....	TP 530
Coon, Joshua J.....	ThOB pm 4:10	Cotter, Robert J.....	TP 590	Cristea, Ileana M.....	ThP 530

INDEX OF AUTHORS

Cristea, Ileana M.	WP 699	Czar, Martin F.	MOC pm 3:30	Danziger, Samuel	MP 522
Crizer, David M.	WP 005	Czempere, Frank	WOE pm 2:30	D'Aoust, Marc-Andre	ThP 655
Crizer, David M.	WP 067	da Silva, Gabriel	ThOB pm 2:50	Darbour, Florence	WOE pm 3:10
Croley, Timothy R.	WP 075	Daali, Youssef	MP 028	Darfier, Marlene	ThP 525
Crone, Catharina	MP 092	Dadgar, Dari	TP 279	Darfier, Marlene M.	WP 164
Crone, Catharina	WOE pm 2:30	Dadgar, Dari	ThP 183	Dargère, Delphine	ThP 269
Crone, Catharina	MP 103	Dadgar, Darioush	WP 242	Dargis, Michele	ThP 655
Crone, Catharina	WP 078	Dagan, Shai	MP 397	Darii, Ekaterina	WP 581
Crook, Marty D.	WP 322	Dahl, Jeff	WP 345	Darley-Usmar, Victor	ThP 673
Cross, Tyra	TP 689	Dahl, Jeffrey H.	TP 227	Daroda, Romeo	MP 042
Cross, Tyra J.	WP 642	Dahl, Jeffrey H.	MP 422	Daroda, Romeu	TP 139
Cross, Tyra J.	ThP 685	Dahl, Jeffrey H.	WP 208	Daroda, Romeu	TP 150
Cross, Tyra J.	TP 668	Dahl, Jeffrey H.	ThP 332	Darula, Zsuzsa	WOD am 09:30
Crow, Frank W.	WP 160	Dahl, Jeffrey H.	TP 275	Darveau, Richard	WP 351
Crow, Frank W.	WP 165	Dahl, Robert	TP 717	Darville, Lancia N.F.	TP 390
Crow, Frank W.	WP 161	Dahlgren, Meg	WP 350	Darwanto, Agus	TP 712
Crowder, Chris	MP 550	Dai, Dao-Fu	WP 046	Das, Abhirup	ThP 494
Crowe, David	WP 176	Dai, Hongping	ThP 259	Das, Biplab	WP 280
Crowe, Hayley	WP 207	Dai, Jeff	MP 140	Das, K. C.	ThP 338
Crowell, Kevin	WP 376	Dai, Jenny	ThP 117	Dasari, Surendra	TP 382
Crowell, Kevin	WP 377	Dai, Junbiao	TP 434	Dasgupta, Purnendu K.	MP 169
Crowell, Kevin	TP 141	Dai, Lan	ThP 672	Dass, Chhabil	TP 493
Crowell, Kevin L.	TP 160	Dai, Lunzhi	MOA pm 3:10	Date, Sachiko	WP 285
Crowley, Jan	ThP 335	Dai, Lunzhi	TP 436	Dator, Romel	MP 617
Crowley, Jan	MP 078	Dai, Shujia	TP 708	Daugherty, Kenneth	MOG am 08:30
Crowley, Richard	ThOF am 09:10	Dai, Shujia	ThP 478	Daugherty, Sean	MP 350
Crowley, Rick	TP 112	Dai, Shujia	TP 697	Davalos, Juan	MP 131
Cruickshank, Charmion	WP 673	Dai, Yue	WP 706	Dave, Kuldeep D.	WP 670
Cruickshank, Faye	WOB pm 4:10	Dai, Yubin	ThP 192	Davey, Nicholas G.	ThP 356
Cruz, Gabriel C. N.	MP 615	Dal Bello, Federica	MP 660	Davey, Nicholas G.	ThP 355
Cruz, Lourdes	MP 461	Dale, Bruce	TP 192	Davidov, Eugene	MP 130
Csako, Gyorgy	WP 598	Dalebout, Hans	TP 649	Davidov, Eugene	ThP 104
Cudjoe, Erasmus	ThP 130	Dallongeville, Sophie	WP 083	Davidova, Irene	ThP 349
Cudjoe, Erasmus	WOF am 09:30	Dallongeville, Sophie	TP 627	Davidson, Jeffrey	TP 143
Cudjoe, Erasmus	ThP 131	Dalmia, Avinash	ThP 357	Davidson, Nancy	WP 461
Cui, Baoliang	MP 174	Dalmia, Avinash	MP 350	Davies, Alun H.	ThP 250
Cui, Jian	WP 403	Dalmia, Avinash	WP 328	Davies, Steve	MP 547
Cui, Jian	ThP 090	D'aloise, Paul	WP 210	Davila, Stephen	MP 008
Cui, Li	MOC am 09:50	Dalpathado, Dilusha	MP 168	Davila, Stephen	ThP 064
Cui, Liang	WP 676	Dalton, Stephen	ThP 463	Davila, Stephen	WOC pm 2:50
Cui, Weidong	WP 532	Dalton, Stephen	TP 526	Davin, Laurence	WP 426
Cui, Weidong	TOE am 09:30	Daly, Michael	MP 537	Davis, Daphne	ThP 279
Cui, Weidong	TP 501	Daly, Thomas	TP 119	Davis, Roderick	TP 136
Cui, Yang	WP 428	D'Amelio, Frank	ThP 324	Davoli, Enrico	MP 367
Cullen, Thomas	MP 234	D'Amico, Phil	MP 264	Davuluri, Pratap	MP 161
Cunha, Ildenize B. S.	MP 042	D'Amico, Phil	TP 510	Davuluri, Pratap	WP 101
Cunha, Ildenize B. S.	MP 043	Damkroeger, Glenn	MP 352	Dawson, Brent	TP 328
Cunliffe, Jennifer	WP 100	Dammer, Eric	TP 666	Daxboeck, Michael	MP 268
Cunningham, John	MP 128	Damoc, Eugen	MP 560	Day, Robert M.	MP 468
Cunningham, Robert	MP 481	Damoc, Eugen	MP 093	Daye, Laura	WP 675
Curcio, Davide	ThP 363	Damoc, Eugen	MP 557	Dayer, Jérôme	TP 220
Curthoys, Norman	TP 707	Damoc, Eugen	WP 090	Dayon, Loïc	TP 686
Curthoys, Norman P.	TP 609	Damoc, Eugen	WOE pm 2:30	Dayon, Loïc	TP 675
Curtis, Matthew	WP 115	Damoc, Eugen	MP 092	de Almeida, Marlon Brando Bezerra ..	ThP 339
Curtis, Matthew	WP 186	Damoc, Eugen	MP 107	de Bruijn, Ernst	TP 146
Curtis, Matthew	TP 041	Damoc, Eugen	MP 453	de Bruin, Jeroen S.	ThP 408
Curtis, Matthew	WP 114	Damoc, Eugen	TP 706	De Costa, Dominique	ThP 650
Curtis, Sharon	WP 013	Damoc, Eugen	WP 082	de Costa, Dominique	MP 681
Cusack, Kevin	WP 682	Damsbo, Martin	TP 399	de Haan, Bjorn	MP 224
Cushman, Mark	WP 274	Dancel, Maria Cristina A.	MP 573	de Jager, Marko	TP 456
Cushman, Mark	WP 123	Dane, John	TP 345	De Jesus, Victor	WP 672
Cuthbert, Carla	WP 672	Dane, John	MP 135	De Jesus, Victor R.	ThP 291
Cutillas, Pedro	ThP 507	Dane, John	TP 044	de Jong, Ad P.J.M.	ThP 651
Cutillas, Pedro	WP 218	Danell, Ryan M.	ThP 027	de Jong, Ebbing	MP 689
Cutillas, Pedro	ThP 508	Danell, Ryan M.	MP 067	de Jong, Gerhardus	TP 379
Cutillas, Pedro R.	ThP 089	Danell, Ryan M.	ThP 074	de la Torre, Xavier	ThP 363
Cutler, Jim E.	MP 544	Dangi, Bindi	MP 260	dé Lannoy, Ines	ThP 130
Cutts, John	ThP 228	Dangott, Lawrence	Special 001	dé Lannoy, Ines	ThP 131
Cuyckens, Filip	TP 222	Daniel, Régis	WP 549	De Leoz, M. Lorna	MP 276
Cuyckens, Filip	TP 224	Danielewicz, Megan	ThP 264	De Leoz, M. Lorna	TP 161
CV, Suresh Babu	TP 511	Daniels, Danette	WP 610	De Leoz, M. Lorna	MP 274
Cvacka, Josef	MP 245	Danielson, Steven	WP 459	De Mel, Niluka	TP 124
Cvetkov, Teresa	WOG am 10:10	Danielson, William	WOB am 08:30	De Moor, Bart	TP 410
Cyr, Denis	MP 340	Danielson, William F.	ThP 033	De Moor, Bart	TP 411
Cyriac, Jobin	WOC pm 2:30	Danielson III, William	TP 141	de Oliveira, Diogo	ThOB pm 2:30
Cyriac, June	WP 050	Danion, Anne	MP 254	De Pauw, Edwin	MP 061
Cyriac, June	WP 049	Dantus, Marcos	WP 026		

INDEX OF AUTHORS

De Pauw, Edwin	TP 155	Delanghe, Bernard	MP 453	Devarajan, Prasad	WP 599
De Pauw, Edwin	MOD pm 2:50	Delanghe, Bernard	ThP 384	Devi, Lakshmi	TP 454
De Pauw, Edwin	ThOD pm 4:10	Delanghe, Bernard	WOA pm 3:30	Devorak, Jennifer	ThP 382
De Pauw, Edwin	MP 574	DELBOIS, Jean-Marie	TOF pm 2:50	DeVos, Elissa L.	MP 686
De Pauw, Edwin	MP 569	Delcambre, Adéline	ThP 315	Dewald, Howard D.	ThP 548
De Pauw, Edwin	WP 201	Delemonté, Thierry	TP 220	Dewald, Howard D.	ThP 031
De Pauw, Edwin	ThP 141	Deligny, Audrey	MP 279	Dey, Subhakar (Subi)	MP 334
De Pauw, Edwin	MP 604	Dell, Anne	MP 278	Deyanova, Ekaterina G.	TP 607
de Sa, Gilberto	MP 042	Deluc, Laurent	ThP 327	Dhanikula, Renu S.	ThP 189
de Souza, Rodrigo O. M. A.	MP 040	Delvolve, Alice	ThP 272	Dhawan, Punita	MP 693
De Vera, Ian Mitchell S.	MP 573	Demarais, Nicholas	WP 023	Dhaware, Deepika	MP 333
Dean, Brian	TP 253	Demarest, Stephen	MOB pm 3:10	Dhedra, Keertan	ThP 267
Dean, Brian	WP 418	Demers, Roger	MP 172	Dhinojwala, Ali	MP 267
Dean, Brian	MP 195	Demers, Roger	ThP 128	Di Corcia, Daniele	TP 315
Dean, Ralph A.	MP 519	Demeure, Kevin	ThP 141	Di Corcia, Daniele	TP 326
Dean, Ralph A.	TP 385	Demeure, Michael	TP 683	Di Donato, Lorella	WP 668
Dean, Ralph A.	WP 529	Demkina, Elena	MP 497	Di Donna, Leonardo	ThP 317
Deane, Natasha G.	MP 693	Demmers, Jeroen	TP 714	Di Donna, Leonardo	WP 133
Dearden, David V.	TOE am 08:30	Demuth, Jessica	ThP 541	Di Gangi, Iole Maria	WP 227
Dearden, David V.	WP 051	den Os, Désirée	ThP 522	Di Mascio, Paolo	MP 239
Dearden, David V.	WP 341	Dendukuri, Sushma	ThP 299	Di Palma, Serena	TOG am 09:30
Dearden, David V.	WP 342	Deneshgari, Firouz	ThP 695	Di Poto, Cristina	TP 445
DeArmond, Patrick D.	WP 614	Deng, Bin	ThP 504	Diachenko, Gregory	TP 353
DeArmond, Patrick D.	MP 641	Deng, Fu	TP 254	Diamant, Benjamin	WP 380
DeArmond, Patrick D.	TOD pm 3:10	Deng, Haiteng	TP 642	Diamond, Deborah L.	TP 141
Debarber, Andrea	WP 674	Deng, Lu	WP 055	Diamond, Deborah L.	ThP 647
Debois, Delphine	MOD pm 2:50	Denisov, Eduard	MP 092	Diamond, Deborah L.	ThP 255
Debois, Delphine	MOD pm 3:10	Denisov, Eduard	MP 107	Dias, Eduardo	WP 157
Debois, Delphine	WP 201	Denisov, Eduard	WP 090	Diaz Arevalo, Diana	TP 518
Debois, Delphine	MP 569	Denisov, Eduard	MP 560	Dicaire, Catherine	MP 151
Debrauwer, Laurent	WP 072	Dennehy, Michelle	MOF pm 4:10	Dickman, Kathleen G.	TP 322
Debrauwer, Laurent	MP 420	Denner, Larry	TP 605	Diedrich, Jolene	MOC am 10:10
DeBrosse, Catherine	WP 560	Denniff, Philip	TOF am 10:10	Diedrich, Jolene K.	WOG pm 3:10
Decker, Georges	MP 679	Dennis, Edward A.	WOC am 10:10	Diego, Pamela Ann	WP 479
Decker, Petra	TP 318	Dennis, James W.	WP 706	Dieguez-Acuna, Francisco J.	TP 648
Decker, Petra	TP 099	Denny, Richard	ThOB pm 3:50	Diehl, Diane	ThP 636
Decker, Petra	MP 408	Denu, John M.	ThP 549	Diehl, Diane	ThP 119
Deckman, Ingrid	TP 599	Dephoure, Noah E.	MOA am 08:30	Diehl, Diane	WP 103
Decrop, Wim	TP 125	Dephoure, Noah E.	TP 459	Diehl, Diane	MOG am 09:10
Dedon, Peter	WP 676	Derewacz, Kasia	TP 152	Diehl, Wade	TP 158
Deelder, André	MP 444	Derks, Rico J.E.	WP 292	Dielman, Demetrius	TP 565
Deelder, André	ThP 444	Derks, Pieter	TP 595	Dien, Bruce	MP 293
Deelder, André	TP 413	Dernis, Dominique	WP 640	Dietiker, Rolf	MOD am 08:30
Deelder, André M.	WP 632	Dernis, Dominique	WP 517	DiFonzo, Andrea	TP 462
Deelder, André M.	WP 653	Derpmann, Valerie	MP 004	Dignam, John D.	MP 626
Deelder, André M.	MP 599	Derpmann, Valerie	TP 071	Dikic, Ivan	MP 514
Deelder, André M.	WP 292	Derpmann, Valerie	MP 006	Dikler, Sergei	ThP 540
Deelder, André M.	TP 649	Derpmann, Valerie	MP 002	Dilger, Jonathan	TP 145
Deelder, André M.	WP 436	Derpmann, Valerie	TP 070	Dilger, Jonathan	TP 142
Deelder, André M.	ThP 595	Desaire, Heather	ThP 586	Dill, Allison L.	WP 442
Deelder, André M.	TP 402	Desaire, Heather	ThP 481	Dill, Brian	MP 212
Deelder, André M.	TOG pm 4:10	DeSantos-Garcia, Janai	WOD pm 4:10	Dillon, Karin	TP 276
Deelder, André M.	ThP 408	DeSantos-Garcia, Janie	MP 286	Dillon, Leonard	TP 250
Deeley, Jane M.	ThP 276	Desantos-Garcia, Janie	TP 174	Dillon, Leonard	WP 124
Defer, Christine	WP 517	Desbenoit, Nicolas	TOF pm 3:50	Dilly, Sebastian	TOF am 08:30
Defer, Christine	WP 640	Desbrow, Claire	ThP 122	Dimaggio, Peter A.	TP 433
DeForrest, Z.	ThP 110	Desbrow, Claire	ThP 121	Dimaggio, Peter A.	MP 470
DeGraw, Tyler	ThP 110	Deschenes, Eric	ThP 320	Dimaggio, Peter A.	WP 710
DeGreeff, Lauryn	WP 193	Desharnais, Philippe	TP 636	DiMaggio, Peter A.	WP 514
Degueldre, Michel	MP 574	Deshayes, Kurt	ThP 501	Dimaggio, Peter A.	MP 513
Deibel, Eduard	MP 001	Deshmukh, Gauri	TP 253	Dimapasoc, Lauren	MP 274
Deimler, Robert	WP 040	Deshmukh, Rajendrasing	ThP 190	Dimapasoc, Lauren	ThOD am 09:50
Deininger, Soeren-Oliver	TP 403	Deshpande, Samir	ThOC pm 4:10	DiMuzio, Jason	WP 013
Deinzer, Max L.	WP 064	Desjardins, Michel	ThP 648	D'Incalci, Maurizio	WP 237
Deis, Lindsay N.	MP 641	Desmons, Annie	MOD pm 3:10	Dindyal-Popescu, Alina	ThP 187
DeJesus, Megan	MP 118	Desouza, Lerof	ThP 698	Dindyal-Popescu, Alina	TP 221
Dekker, Karsten	MP 224	DeSouza, Leroi	MP 688	Dineley, Kelly	TP 605
Dekker, Lennard	ThP 650	Dessiaterik, Yury	ThP 026	Diner, Benjamin A.	MP 621
Dekker, Lennard	MP 594	Deterding, Leesa	ThP 532	Ding, Chen	WP 522
Dekker, Lennard	TP 595	Deterding, Leesa J.	TP 652	Ding, Chen	MOA am 08:50
Dekker, Lennard J.	MP 681	Deutsch, Eric	ThP 386	Ding, ChuanFan	ThP 457
Dekker, Lennard J.	TP 667	Deutsch, Eric	WP 505	Ding, Li	TP 027
Dekkers, Dick	TP 714	Deutsch, Eric	ThP 409	Ding, Li	ThP 455
Del Rosso, Renato	MP 367	Deutsch, Eric	MP 431	Ding, Shi-Jian	MOA pm 3:50
DeLa Maza, Luis	WP 044	Deutsch, Eric	WP 381	Ding, Shi-Jian	TP 381
Delanghe, Bernard	ThP 401	Deutsch, Eric	WP 369	Ding, Shi-Jian	TP 710
Delanghe, Bernard	TP 383	Devarajan, Prasad	WP 599	Ding, Shi-Jian	ThP 396

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Ding, Shi-Jian	ThP 692	Dorow, Steve.....	TOC am 10:10	Duan, Xiaotao.....	MP 591
Ding, Wang-Hsien	MP 378	Dörr, Felipe Augusto	TOB am 09:50	Dubin, Paul.....	WP 547
Ding, Wang-Hsien	MP 379	Dorrestein, Pieter	ThOC pm 3:10	Dubois, Laura	TP 709
Ding, Wei.....	MP 140	Dorrestein, Pieter	MOD am 09:10	Dubois, Laura G	MP 585
Ding, Xiao.....	TP 253	Dorrestein, Pieter	MP 498	Dubois, Laura G	WP 601
Ding, Xiao.....	MP 195	Dorrestein, Pieter	TP 409	Dubois, Laura G	ThP 517
Ding, Xuan.....	WP 577	Dorrestein, Pieter	WP 420	Dubois, Laura G	WP 645
Ding, Yi	MP 153	Dorrestein, Pieter	WP 454	Ducan, Jason S	ThOG pm 2:50
Ding, Yongmei	ThP 406	Dorrestein, Pieter	MP 542	Duchateau-Ngyuen, G.	WOF pm 2:30
Ding, Yue-He.....	TOD am 09:10	Dorrestein, Pieter	ThP 494	Duchoslav, Eva	ThP 262
Dingemanse, Jasper	ThP 099	Dorrestein, Pieter	MOD pm 2:30	Duchoslav, Eva	ThP 295
Dinglasan, Rhoel	TP 626	Dorrestein, Pieter	WP 455	Duchoslav, Eva	ThOG am 08:50
Dinglasan, Rhoel R.	ThP 611	Dorrestein, Pieter C.	MP 492	Duchoslav, Eva	WP 306
Dingle, Tanis	WP 550	Dorrestein, Pieter C.	ThP 330	Duchoslav, Eva	WP 299
Dinman, Jonathan	TP 554	Dorrestein, Pieter C.	MP 500	Duchoslav, Eva	ThP 187
DiPalma, Jack A.	MP 685	Dorschel, Craig	ThP 681	Duchoslav, Eva	WP 221
DiPasquale, Robert A.	MP 240	Dorschel, Craig	TOA am 09:30	Duchoslav, Eva	ThP 314
Dispenza, Melanie	ThP 117	Dost, Banu	TP 439	Duchoslav, Eva	WOC am 09:30
Distel, Daniel	TP 611	Dost, Banu	TP 631	Duczak, Nick.....	WP 138
Dittmann, Antje	ThP 616	Douat, Jennifer	WP 278	Duczak, Jr, Nicholas.....	MP 025
Djidja, Marie Claude	WP 444	Douce, David	TP 250	Dueker, Stephen	ThP 164
Djidja, Marie Claude	TP 148	Douce, David	WP 124	Dueker, Stephen	WP 045
D'mello, Rhijuta	TOD am 10:10	Douce, Gillian	WP 124	Duerksen-Hughes, Penelope J.	TP 712
D'Mello, Rhijuta	MP 640	Doudna, Jennifer A.	TP 156	Duff, Robert J	ThOF am 10:10
Dobbs, Megan.....	TP 452	Dougan, Gordon.....	MP 536	Dufield, Dawn	MOG am 09:30
Döbelin, Werner	ThP 099	Dougherty, Edward R.	MP 469	Dufield, Dawn	MP 507
Dodder, Nathan G.	ThP 649	Douglas, Donald J.....	ThP 040	Dufresne, Craig.....	Special 002
Dodge, Jeffrey	TP 481	Douglas, Donald J.....	WOA am 09:50	Dugourd, Philippe.....	WOE pm 3:10
Dodson, Mark	ThP 235	Douglas, Trevor	WP 537	Dugourd, Philippe	ThP 447
Doerge, Daniel R.	TP 251	Douglass, Kevin	TP 008	Dugourd, Philippe	ThP 032
Doherty, John P	TP 237	Douki, Thierry.....	MP 420	Dugourd, Philippe	TP 012
Doherty, Thomas P.....	WP 070	Doussineau, Tristan	ThP 032	Duirk, Stephen.....	TOB am 08:30
Dold, Sebastian.....	ThOE am 10:10	Dousty, Faezeh	MP 017	Dulgerian, Nishan.....	WP 193
Dolios, Georgia	MP 491	Dovichi, Norman J.	WP 080	Dunbar, Robert C.	ThOB am 10:10
Domanski, Dominik	ThP 524	Downing, Philip	ThP 113	Duncan, David	WP 196
Domanski, Dominik	TP 689	Dowsey, Andrew	ThP 392	Duncan, Kyle D.	ThP 035
Domanski, Dominik	ThP 685	Dowsey, Andrew	ThP 391	Duncan, Kyle D.	MP 387
Domanski, Dominik	WP 642	Dowson, Christopher.....	TP 644	Duncan, Mark	TP 660
Domanski, Dominik	ThP 587	Dowthwaite, Gary.....	ThP 122	Duncan, Wayne.....	MP 409
Domingues, M. Rosário M.	ThP 328	Drader, Jared	ThP 216	Dunlap, Victoria	TP 495
Dominguez, Victoria	WP 028	Drahos, László	TP 528	Dunn, Keiana.....	WP 665
Dominic Savio, Rufina	TP 601	Drake, Penelope M.....	MP 668	Dunn, keiana	ThP 533
Domon, Bruno	MP 679	Drake, Penelope M.....	ThP 512	Dunn, Mike J.....	WP 257
Domon, Bruno	WP 516	Dratz, Edward.....	TP 662	Dunne, Timothy	ThP 202
Domon, Bruno	ThOE am 08:30	Dratz, Edward.....	TP 665	Dunyach, Jean-Jacques	MP 056
Domon, Bruno	MP 683	Dreger, Mathias	ThP 613	Duong, Duc	MP 208
Domon, Bruno	MP 106	Dreiöcker, Frank	ThP 002	Duran, Robert	MP 303
Domonkos, Ildikó	TP 396	Dreisewerd, Klaus	TP 419	Durand, Kirt	WP 480
Donald, William A.	WP 056	Dreisewerd, Klaus	MP 007	Durand, Stanley	MP 222
Donard, Olivier Francois Xavier.....	TP 299	Dreisewerd, Klaus	WOC am 08:50	Durand, Stanley	TOG pm 2:30
Donard, Olivier Francois Xavier.....	TP 298	Dresler, Jiri	MP 209	Durbin, Kenneth R.	ThP 605
Doneanu, Catalin	ThP 636	Drevinec, Michal	MP 388	Durbin, Kenneth R.	MP 595
Doneanu, Catalin	ThP 637	Drewes, Gerard	ThP 616	Durbin, Kenneth R.	WOA am 10:10
Dong, Duc.....	WP 393	Drewes, Jorg	WP 311	Durette, Chantal	MOA pm 3:30
Dong, Feng	ThP 010	Drexler, Dieter	ThP 186	Durette, Chantal	ThP 499
Dong, Feng	MP 018	Dreyer, Mark	TP 082	Duriez, Elodie	ThOE am 08:30
Dong, Feng	ThP 445	Dreyer, Mark L.....	MP 381	Duriez, Elodie	MP 683
Dong, Jia	WP 004	Dröse, Stefan	ThP 688	Duriez, Elodie	WP 516
Dong, Linlin.....	WP 147	Drouin, Elise E.	ThP 600	Durr, Eberhard.....	ThP 634
Dong, Linlin.....	WP 345	Drouin, R.	MP 340	D'Urso, Federica	TP 315
Dong, Linlin.....	TP 136	Drummer, Olaf.....	ThOE am 09:10	Dussault, Gerard	ThP 362
Dong, Meng-Qiu.....	TOD am 09:10	Drynda, Susanne.....	WP 596	Dutasta, Jean-Pierre	WP 338
Dong, Meng-Qiu.....	WP 404	Du, Alicia	TP 254	Dutt, Manish.....	TOD am 10:10
Dong, Meng-Qiu.....	ThOA am 09:10	Du, Alicia	TP 234	Duyckaerts, Charles.....	ThP 269
Dong, Ming	WP 608	Du, Fuying	WOG pm 2:30	Dvořáková, Hana.....	ThP 294
Dong, Qian.....	ThOA am 09:50	Du, Jie.....	WP 651	Dwinell, Mindy	WP 709
Dong, Qian.....	WP 378	Du, Jie.....	ThP 159	Dwivedi, Ravi C.....	ThP 350
Dong, Xintong	TP 713	Du, Jie.....	TP 389	Dybkov, Olexander.....	ThOD pm 2:30
Donovan, Brent.....	WOF pm 3:10	Du, Min.....	TP 664	Dyer, Jennifer	MP 161
Donovan, Laura	WP 592	Du, Min.....	TP 663	Dyer, Jim	ThP 065
Donovan, Laura	WP 393	Du, Xiuxia	WP 580	Dyson, Barry	ThOB pm 3:50
Donovan, Laura	TP 666	Du, Xiuxia	WP 288	Dzieciatkowska, Monika	WP 637
Dooley, Alek N.	MP 185	Du, Yu-Chun.....	ThP 625	Dzieciatkowska, Monika	TP 633
Dorai, Haimanti.....	TP 115	Du, Yunpeng.....	TP 435	Dzien, Alexander	MP 328
Dornelas, Marcelo.....	ThP 322	Du, Zhanwen.....	WP 611	E, Sook Yen.....	TP 485
Dorny, Pierre.....	MP 444	Duan, Jicheng.....	ThP 527	Earl, Josh	WP 350
Doroshenko, Vladimir M.	ThP 013	Duan, Xiaotao.....	MOG am 10:10	Earla, Rajya Lakshmi	WP 386

INDEX OF AUTHORS

Earla, Rajya lakshmi	WP 243	Eijkkel, Gert	ThOA pm 2:30	Engen, John R.	TP 494
Earla, Ravinder	WP 386	Eikel, Daniel	TOF pm 4:10	Engen, John R.	WP 557
Earla, Ravinder	WP 243	Eikel, Daniel	ThP 380	Engen, John R.	TP 482
Earll, Mark	WP 287	Eikel, Daniel	TP 276	Engen, John R.	TP 502
Easterling, Michael	MP 562	Eikel, Daniel	ThOE am 09:30	Engholm-Keller, Kasper	ThP 401
Easterling, Michael	WP 418	Eisenbach, Michael	WP 464	Engholm-Keller, Kasper	MP 486
Easterling, Michael L.	MP 476	Eisenberg, Eugene J.	MP 175	Englehart, Ben	ThP 178
Eastwood, Stephanie	TP 470	Eisenhaure, Thomas	ThP 500	Engler, Frank	ThP 599
Eaton, Andrew	WP 311	Eiter, Lauren C.	MP 394	Engler, Frank	MP 591
Eaton, Linda	MP 134	Ejsing, Christer	WOC am 09:30	English, Luc	ThP 648
Eaton, Suzanne	ThP 280	Ejsing, Christer	MP 269	Enjalbert, Quentin	WOE pm 3:10
Ebanks, Roger	TP 637	Ekanayaka, E.A.Prabodha	TP 191	Enjalbert, Quentin	ThP 447
Ebata, Shingo	ThP 067	Eksteen, Roy	MP 198	Entwistle, Andrew	TP 075
Ebata, Shingo	ThP 062	El Aalamat, Yousef	TP 411	Enyenihi, Atim	WP 553
Ebbel, Erika N.	ThOA pm 3:30	El Farkh, Khalid	ThP 051	Enyenihi, Atim Atte	WP 464
Ebbels, Timothy	MP 433	El Farkh, Khalid	ThP 028	Eom, Han Young	ThP 170
Ebel, Joseph	ThP 380	El Farkh, Khalid	WP 338	Eom, Han Young	ThP 169
Eberl, Anita	WP 149	El Farkh, Khalid	WP 066	Epstein, Jonathan A	WP 373
Eberlin, Livia S.	WP 452	El Farkh, Khalid	WP 019	Erb, Robert	WP 189
Eberlin, Livia S.	TP 288	El-Faramawy, Ayman	MP 085	Erde, Jonathan	MP 537
Eberlin, Livia S.	WP 442	El-Hawiet, Amr	WP 550	Erde, Jonathan	WP 396
Eberlin, Marcos	TP 139	El-Hawiet, Amr	WP 551	Erdodi, Gabor	TP 333
Eberlin, Marcos	TP 150	Eliades, John	MP 401	Erickson, Alison	TP 621
Eberlin, Marcos N	MP 041	Eliuk, Shannon	TP 560	Erickson, Alison R.	ThOC pm 3:50
Eberlin, Marcos N	MP 042	Eliuk, Shannon M	MP 595	Erickson, Alison R.	MP 531
Eberlin, Marcos N	MP 040	El-Kased, Reham F.	ThP 652	Erickson, Brian	MP 449
Eberlin, Marcos N	TP 291	Elkin, Carl	TP 502	Erickson, Brian	ThP 385
Eberlin, Marcos N	ThP 289	Elkin, Carl	WP 545	Erickson, Brian	ThP 402
Eberlin, Marcos N	MP 043	Elledge, Alexandra	TP 049	Erickson, Jamie	WOF am 09:50
Eberlin, Marcos N	TP 306	Ellingson, Sally	ThP 402	Erickson, Lenny	ThP 024
Eblen, Scott	TP 544	Ellingson, Sally	ThP 385	Eriksson-Mammo, Sofie	MOD pm 3:30
Echenne, Bernard	MP 340	Ellingson, Sally	MP 449	Ernst, Robert K.	MP 252
Echterbille, Julien	MP 604	Elliott, Marc	MP 219	Ernst, Robert K.	MP 250
Echterbille, Julien	TP 155	Elliott, Monica H	WP 633	Ernst, Robert K.	MP 249
Eckenrode, Brian	WP 193	Elliott, Monica H	TP 689	Eshoo, Mark	MP 550
Ecker, Dave	MP 550	Elliott, Noelle M.	ThP 238	Espinosa, Orlando	WP 097
Ecker, David	MP 551	Elliott, Susan	MP 343	Espourteille, Francois A.	TP 370
Eckert, Gunter	MP 654	Ellis, Jacqueline	ThP 559	Espy, Ryan	TP 019
Eckert, Randal	ThP 461	Ellis, Megan	TP 512	Espy, Ryan	TOF am 09:50
Eckstein, James A.	WP 690	Ellis, Robert	MP 024	Essioux, Laurent	WOF pm 2:30
Economou, Anastassios	WP 540	Ellis, Robert	ThP 358	Estrella, Ruby	MP 288
Economou, Anastassios	WP 069	Ellis, Robert	WP 221	Etienne, Chris	WP 615
Ed, Lui	ThOG am 08:50	Ellis, Robert	TP 297	Eugenio, Luiz	WP 550
Edbey, Khaled	TP 350	Ellis, Robert	ThP 314	Euloth, Michelle	TP 637
Eden, Sam	WP 019	Ellis, Shane	ThP 276	Evans, Adam	TP 606
Edgar, J. Scott	MP 587	Ellis, Shane R	MP 253	Evans, Adam R.	WP 458
Edgar, J. Scott	MP 203	Ellisor, Michael	WP 375	Evans, Anne M.	TP 190
Edgar, John	WOC am 08:30	Elman, James F.	ThP 160	Evans, Christopher A.	TOF am 08:50
Edgar, John	MP 250	Elmeliegy, Mohamed	MP 178	Evans, Erica	ThP 185
Edgar, John	TP 055	Elmer, Sidmey	TP 489	Evansky, Paul	WP 675
Edge, Anthony	MP 580	Elnaggar, Mariam S	TP 424	Evans-Nguyen, Kenyon	ThP 382
Edirisinghe, Praneeth	MP 586	Elortza-Basterrika, Félix	ThP 614	Everett, Addison	ThP 065
Edirisinghe, Indika	TP 098	El-Registan, Galina	MP 497	Everett, Jeffrey A.	MP 057
Edison	MP 257	Elssner, Thomas	MP 388	Everley, Robert A.	ThOA pm 4:10
Edom, Richard W.	ThP 214	Emili, Andrew	ThP 610	Ewanicki, Jason	WP 401
Edwards, Brian	ThP 190	Emili, Andrew	WP 508	Ewing, Michael	TP 145
Edwards, Kathleen	TP 286	Emmert-Buck, Michael	TP 634	Ewing, Rob	WP 611
Edwards, Nathan	ThP 611	Emmett, Mark R.	TP 475	Eyers, Claire	MP 451
Edwards, Nathan J.	ThP 579	Emmett, Mark R.	ThP 342	Eyers, Claire	WOB am 08:50
Edwards, Rebecca	WP 169	Emmett, Mark R.	MP 287	Eyler, John R.	MOC pm 2:30
Edwards, Rebecca	TP 425	Emmett, Mark R.	MP 558	Eysberg, Martin	WP 617
Edwards-Jones, Valerie	MP 547	Émond, Geneviève	ThP 469	Eysberg, Martin	TP 210
Edwards-Jones, Valery	ThP 596	Enders, Jeffrey	TP 147	Ezan, Eric	TP 464
Egan, Josephine M.	WP 658	Endler, Carolin	ThOD pm 2:30	Ezan, Eric	MP 389
Egan, Thomas	TP 140	Eng, Jimmy	MP 442	Ezan, Eric	ThOG am 09:50
Egelhoff, Thomas	TP 550	Eng, Jimmy	ThP 386	Ezan, Eric	MP 297
Egertson, Jarrett	MP 438	Eng, Jimmy	MP 105	Ezan, Eric	TP 432
Egertson, Jarrett D.	TOE pm 3:50	Eng, Jimmy	MP 438	Ezzati, Peyman	ThP 350
Egger, Rachel	ThP 304	Eng, Jimmy	WP 369	Ezzati, Peyman	MP 687
Eggers, Frederike	WP 605	Engel, Marc E.	TP 367	Faber, Helene	TP 239
Eggertson, Michael	WP 565	Engelhart, David	TP 313	Faber, Helene	WOG pm 3:50
Egnash, Laura A.	WP 272	Engelman, Jeff	WP 395	Faber, Helene	WOG pm 2:50
Egnash, Laura A.	WP 286	Engelman, Jeffrey	TOD pm 3:30	Faber, Helene	TP 213
Ehrlich, Garth D.	WP 350	Engen, John	WP 559	Faber, Johan H.	TP 488
Eickhoff, Kirsten	TP 223	Engen, John R.	MOB pm 4:10	Faber, Scott	TP 366
Eickner, Thomas	ThP 520	Engen, John R.	MOB am 10:10	Faber, Scott	WP 679
Eigenheer, Richard A.	ThP 608	Engen, John R.	WP 565	Fabre, Gerard	WOF am 10:10

INDEX OF AUTHORS

Fabre, Gerard	WP 079	Faserl, Klaus	TP 429	Ferrucci, Luigi	WP 658
Fabris, Daniele	WP 187	Faserl, Klaus	TP 063	Ferzoco, Alessandra	WP 497
Fabris, Daniele	TOE am 10:10	Fast, Douglas	TOF am 09:30	Ferzoco, Alessandra	WP 502
Facette, Michelle	MOE pm 2:50	Fast, Douglas	MP 152	Ferzoco, Alessandra	MP 111
Fadgen, Keith	WP 565	Fauland, Alexander	ThP 263	Ferzoco, Alessandra	WP 067
Fadgen, Keith	MP 584	Faull, Kym	WOA am 08:30	Ferzoco, Alessandra L.	WP 478
Fadgen, Keith	ThOF am 09:30	Faull, Kym	TP 555	Fesinmeyer, R. Matthew	MOG am 08:30
Fadgen, Keith	MP 585	Faull, Kym	MP 307	Fessel, Joshua	WP 462
Faergeman, Nils	ThP 401	Faull, Kym F.	MP 185	Fessler, Michael B.	TP 652
Fagerquist, Clifton K.	MP 592	Fazio, Gia C.	ThP 305	Festa, Michael	TP 026
Fague, Kaitlin	MP 593	Fechheimer, Marcus	MP 607	Festa, Michael	TP 043
Faherty, Brendan	MOA am 09:30	Fedeli, Olivier	WP 079	Fetterly, Gerald	WP 129
Faherty, Brendan	MP 459	Fedorova, Anna	ThP 501	Fetterly, Gerald	WP 130
Fahlman, Brian	MP 363	Feelisch, Martin	TP 644	Feyerherm, Fred	TP 313
Fahrenholz, Timothy	WP 679	Fehniger, Thomas	TOF pm 3:10	Fialkov, Alexander B.	MP 068
Fair, Sarah	ThP 133	Feil, Stefan	WP 066	Fialkov, Alexander B.	ThP 217
Fajas, Laurence	WOF am 10:10	Feil, Stefan	WP 338	Fiedler, Katherine L.	ThP 502
Fajas, Laurence	WP 079	Feil, Stefan	WP 019	Fiehn, Oliver	MP 322
Falcone, Caitlin E.	TP 021	Feild, Brian	TP 655	Fiehn, Oliver	TP 203
Falcón-Pérez, Juan M.	ThP 614	Feketeova, Linda	WP 065	Fiehn, Oliver	WP 365
Falk, Irene N.	MP 637	Felder, Mildred	ThP 680	Fiehn, Oliver	WP 303
Falkenberg, Heiner	ThP 594	Feldman, Adam S.	ThOA pm 4:10	Fiehn, Oliver	ThOA pm 3:10
Falkenby, Lasse G.	MP 225	Feldmann, Friederike	TP 630	Fields, Taylor	MP 226
Falkenby, Lasse G.	TP 437	Feldmann, Heinz	TP 630	Figard, Ben	ThP 135
Falkenhagen, Jana	ThOC am 08:50	Feldmesser, Marta	TP 647	Figard, Benjamin J.	MP 567
Fälth, Maria	MOD pm 3:30	Fell, Lorne	WOF pm 4:10	Figueiredo, Alana Dos Reis	WP 573
Fälth, Maria	WP 430	Felts, Katie	MP 553	Filary, Mark	TP 321
Falzo, Matteo	ThP 179	Fenaille, Francois	TP 464	Filevich, Jorge	MP 018
Famiglini, Giorgio	TP 261	Fenaille, Francois	MP 389	Filevich, Jorge	ThP 445
Famiglini, Giorgio	WP 094	Fenaille, Francois	MP 297	Filippakopoulos, Panagis	TP 482
Fan, Anding	MP 553	Fenaille, Francois	TP 432	Filippakopoulos, Panagis	MOB pm 4:10
Fan, Guoping	MP 307	Feng, Changgeng	WP 487	Filippos, Michopoulos	WP 269
Fan, Hui	ThP 016	Feng, Feng	WOC pm 3:30	Filippov, Valery	TP 712
Fan, Sheng-Bo	WP 404	Feng, Jinhua (Jenny)	TP 124	Filippova, Maria	TP 712
Fan, Teresa	MP 316	Feng, Jinhua (Jenny)	ThP 486	Fillmore, Thomas	MP 099
Fan, Xing	ThP 672	Feng, Xidong	TP 110	Fillmore, Thomas L.	TP 673
Fan, Xing	MP 663	Feng, Yan	MOA am 09:50	Fillon, Sophie	WP 603
Fan, Yi	ThP 148	Fenn, Larissa S.	TP 152	Finan, Michael A.	MP 289
Fandino, Anabel	WP 209	Fenselau, Catherine	TP 554	Findeiß, Sven	WP 628
Fandino, Anabel	WP 150	Fenyo, David	WOG am 09:50	Findsen, Eric	ThP 143
Fang, Aiqin	WP 363	Ferguson, Carly	TP 006	Fine, Zachary	TP 651
Fang, Aiqin	WP 684	Ferguson, Carly N.	WP 539	Finley, Daniel J.	WP 691
Fang, Huafeng	TOC pm 3:30	Ferguson, James A.	WP 276	Finney, Gregory	TOA pm 2:50
Fang, Jing	TP 494	Ferguson, James A.	ThP 195	Fioramonte, Mariana	WP 574
Fang, Liqiong	WP 391	Ferguson, Leesa	WP 194	Fischbach, Michael A.	MP 500
Fang, Liqiong	TP 188	Ferguson, Leesa	WP 197	Fischer, Curt	TP 620
Fang, Meng	TP 526	Ferguson, Steve	ThP 468	Fischer, Gavin	MP 553
Fang, Pengfei	TP 496	Fermin, Damian	WP 389	Fischer, Lutz	MP 524
Fang, Tammy	WOD pm 3:30	Fermin, Damian	WP 369	Fischer, Roman	ThOG am 09:30
Fang, Xiang	TP 405	Fernandes, Anna Maria A. P.	MP 043	Fischer, Roman	MP 517
Fang, Xiaoling	TOC pm 3:30	Fernandes, Anna Maria A. P.	MP 042	Fischer, Steven M.	TP 202
Fang, Xinping	WP 260	Fernandes, Deolinda	TP 297	Fischer, Steven M.	MP 314
Fang, Xueping	MP 692	Fernandes, Deolinda	ThP 358	Fischer, Steven M.	TOC am 10:10
Fankhauser, Christoph	ThP 109	Fernandes, John	ThP 304	Fiser, Andras	WP 609
Fankhauser, Christoph	ThP 208	Fernandez, Facundo	TP 033	Fisher, Christine	ThP 541
Fanucci, Gail E.	MP 573	Fernandez, Facundo	TP 021	Fisher, Gregory	WP 408
Farahat, Abdelbasset	WP 284	Fernandez, Facundo	MP 021	Fisher, Nicholas	MP 262
Farcas, Claudiu	ThP 405	Fernandez, Facundo	TP 039	Fisher, Robert	ThP 414
Farias, Santiago	WP 472	Fernandez, Facundo M.	TP 144	Fisher, Susan	WP 638
Farizon, Bernadette	WP 338	Fernandez de la Mora, Juan	MP 062	Fisher, Susan	TP 567
Farizon, Bernadette	WP 066	Fernandez De La Mora, Juan	TP 157	Fisher, Susan	MP 668
Farizon, Bernadette	WP 019	Fernandez De La Mora, Juan	TP 138	Fisher, Susan J.	WP 608
Farizon, Bernadette	ThP 028	Fernandez Garcia, Juan	MP 062	Fisher, Susan J.	ThP 512
Farizon, Bernadette	ThP 051	Fernandez-Lima, Francisco	MP 055	Fisher, Susan J.	TP 570
Farizon, Michel	ThP 051	Fernandez-Lima, Francisco A.	MP 063	Fisher, Timothy	TP 678
Farizon, Michel	WP 066	Fernandez-Metzler, Carmen L.	WP 524	Fishman, Vyacheslav N.	WP 322
Farizon, Michel	WP 338	Fernandez-Metzler, Carmen L.	WP 526	Fishpaugh, Jeffrey	MOG pm 3:10
Farizon, Michel	ThP 028	Fernandis, Aaron Zefrin	ThP 260	Fitchett, Jon	ThOF am 08:30
Farizon, Michel	WP 019	Ferrari, Mauro	MP 673	Fitzgerald, Michael	MOB am 08:50
Farkas, Tivadar	MP 190	Ferraris, Joan	ThP 528	Fitzgerald, Michael C.	WP 614
Farley, Dennis	MP 136	Ferraris, Joan D.	WP 696	Fitzgerald, Michael C.	MP 637
Farmar, James	Special 002	Ferreira, Ana I.S.	WP 257	Fitzgerald, Michael C.	MP 605
Farnsworth, Paul B.	TP 077	Ferreira, Christina	ThP 289	Fitzgerald, Michael C.	MP 641
Farrah, Terry	WP 505	Ferreira, Christina	WP 452	Fitzgerald, Michael C.	TOD pm 3:10
Farrell, William	MP 434	Ferreira, Christina	MP 041	Fitzhenry, Matthew	ThP 609
Farrakhi, Vahid	MP 643	Ferrer, Imma	WOF pm 3:30	Fix, Cory	WP 206
Fasciotti, Maira	TP 150	Ferris, Michael J.	MP 544	Fix, Cory	TP 088

INDEX OF AUTHORS

Flammang, Patrick.....	WP 429	Frank, Ari.....	ThP 405	Fu, Yu-Hui.....	WP 242
Flanagan, Michael.....	MP 100	Frank, Richard.....	MP 363	Fuchs, Beate.....	MP 271
Flanagan, Michael.....	WP 209	Frankevich, Vladimir.....	ThP 009	Fuchs, Johannes.....	WP 702
Flanagan, Michael.....	WP 321	Frankevich, Vladimir.....	ThP 008	Fuchser, Jens.....	ThP 231
Flanner, Henry.....	TP 240	Frankevich, Vladimir.....	ThP 551	Fuh, Ming-Ren.....	TP 264
Flarakos, Jimmy.....	MP 037	Frankevich, Vladimir.....	ThP 001	Fuhr, Martin.....	ThP 210
Flarakos, Themis.....	WP 668	Franklin, Edward.....	MP 232	Fuhrer, Tobias.....	TP 716
Flatley, Brian.....	WP 435	Franklin, Ronald.....	TP 235	Fujigaki, Suwako.....	MP 612
Fleming, Andrew.....	WP 228	France, Maartje.....	TP 168	Fujii, Kenichi.....	TP 418
Fleming, Jody.....	MP 677	Frantzeskos-Sardis, Marios.....	WP 069	Fujii, Kenichi.....	TP 417
Flender, Cornelia.....	MP 124	Franz, Annaliese.....	ThP 264	Fujii, Takashi.....	ThP 243
Flesher, Eric.....	TP 049	Franzblau, Scott G.....	ThP 175	Fujimori, Hiroki.....	MP 618
Flick, Tawnya.....	WP 010	Fränzel, Benjamin.....	MP 539	Fujimura, Yoshinori.....	ThP 242
Flinders, Bryn.....	WP 412	Franzke, Joachim.....	TP 053	Fujimura, Yoshinori.....	TP 196
Flook, Kelly.....	ThP 212	Franz-Wachtel, Mirita.....	MP 616	Fujimura, Yoshinori.....	ThP 421
Florens, Laurence.....	WP 076	Franz-Wachtel, Mirita.....	MP 514	Fujimura, Yoshinori.....	WP 231
Floudas, Christodoulos A.....	MP 470	Fraser, Bruce.....	WP 232	Fujimura, Yoshinori.....	WP 215
Flynn, Charles R.....	WP 462	Fraser-Liggett, Claire.....	TP 621	Fujimura, Yoshinori.....	TP 205
Flynn, JoAnne L.....	WP 447	Fraser-Liggett, Claire.....	ThOC pm 3:50	Fujito, Yuka.....	ThP 290
Fogiel, Arthur.....	ThP 207	Fredens, Julius.....	ThP 401	Fujiwara, Masami.....	WP 450
Fogiel, Jr., Arthur.....	ThP 207	Fredolini, Claudia.....	WP 602	Fukami, Tadashi.....	MP 292
Fokt, Izabela.....	MP 287	Freeman, Emily.....	MP 576	Fukusaki, Eiichiro.....	ThP 281
Foltz, Daniel.....	WP 476	Fregoso, Oliver.....	MP 515	Fukusaki, Eiichiro.....	ThP 283
Fontaine, Burr R.....	ThP 234	Frei, Andreas.....	ThOD am 09:30	Fukusaki, Eiichiro.....	ThP 282
Fontaine, Fabien.....	TP 223	Freire, Carmen S. R.....	ThP 328	Fukuyama, Yuko.....	ThP 583
Fonteh, Alfred.....	WP 531	Freitas, Michael A.....	WP 708	Fulton, Scott.....	MP 210
Fontville, Judith.....	ThP 428	Freitas, Michael A.....	MP 454	Funakoshi, Natsumi.....	ThP 583
Forbes, Matthew W.....	WP 250	Freitas, Michael A.....	WP 595	Fung, Eliza N.....	MP 139
Ford, Lisa.....	WP 095	Freitas, Michael A.....	WP 594	Fung, Jennifer.....	TP 611
Ford, Michael.....	WP 610	Freitas, Michael A.....	ThP 601	Furlong, Edward T.....	TOB am 09:10
Fordyce, Katherine.....	ThP 110	Freitas, Michael A.....	MP 516	Furtado, Milton.....	MP 145
Forest, Eric.....	TP 572	Freund, Dana M.....	TP 609	Furtado, Milton.....	MP 151
Formolo, Catherine.....	MP 669	Frey, Brian.....	WP 709	Furtado, Milton.....	MP 144
Fornace Jr., Albert J.....	WOB am 09:30	Frey, Brian L.....	TP 564	Furtado, Milton.....	MP 148
Fornal, Emilia.....	TP 093	Freytag, Johann-Christoph.....	MP 602	Furtado, Milton.....	MP 149
Fornelli, Luca.....	MP 557	Frick, Lauren.....	WP 162	Furtado, Milton.....	MP 143
Forrester, Terrence.....	TOB pm 3:50	Fridén, Mikael.....	ThP 325	Furtado, Milton.....	MP 150
Forsberg, Erica.....	MP 187	Fridman, Tamah.....	MP 468	Furtado, Milton.....	MP 147
Forsberg, Norman.....	ThP 219	Fried, Ruby.....	TP 679	Furtado, Milton.....	MP 142
Förster, Friedrich.....	WP 583	Frieden, Carl.....	MP 644	Furtado, Milton.....	MP 146
Fort, Kyle.....	TP 286	Frieden, Carl.....	TP 486	Furtos, Alexandra.....	WP 339
Fort, Kyle L.....	ThP 022	Friedman, Alan.....	TP 558	Furukawa, Katsumi.....	ThP 290
Fortes, Claudia.....	WP 388	Friedman, Alan.....	WP 475	Furukawa, Ruth.....	MP 607
Foss, Frank.....	ThP 190	Friedman, Alan.....	TP 431	Furuta, Glenn.....	WP 603
Foster, Fred.....	ThP 132	Friedman, David B.....	TP 566	Gaba, Ron C.....	TP 278
Foster, Mark D.....	TP 347	Friedman, David B.....	Special 002	Gabelica, Valerie.....	ThOD pm 4:10
Fotsch, Chris.....	TP 211	Friedman, Rick.....	TP 600	Gabelica, Valerie.....	MP 061
Fouquet, Thierry.....	TP 337	Friedrich, Jochen.....	TP 292	Gabriél, Sarah.....	MP 444
Fouquet, Thierry.....	WP 039	Friend, James.....	ThOG pm 3:10	Gabrielson, John P.....	WP 552
Fournier, Isabelle.....	ThP 425	Frinder, Mark.....	MP 551	Gadgil, Himanshu.....	ThP 644
Fournier, Isabelle.....	TOF pm 3:50	Frisch, Jessica.....	MP 425	Gadgil, Himanshu.....	MOG am 08:30
Fournier, Isabelle.....	TP 407	Friso, Giulia.....	MOE pm 3:10	Gadgil, Himanshu.....	MP 633
FOURNIER, Isabelle.....	TOF pm 2:50	Frison, Gilles.....	WP 488	Gaerlan, Stephanie.....	MP 274
Fournier, Isabelle.....	WP 429	Friss, Tracey.....	TP 664	Gaerlan, Stephanie.....	MP 276
Fournier, Isabelle.....	MOD pm 3:10	Friss, Tracey.....	TP 663	Gagné, Sébastien.....	TP 258
Fox, George.....	TP 709	Fritz, Kristofer.....	WP 500	Gagné, Sébastien.....	TP 271
Fox, James.....	WP 661	Fritz, Kristofer.....	TP 323	Gagné, Sébastien.....	TP 257
Fox, James.....	WP 676	Fritz, Kristofer.....	ThP 493	Gagneux, Pascal.....	MP 277
Fox, Jennifer.....	ThP 623	Fritz, Thomas.....	TOF am 08:30	Gagnon, Rene.....	MP 340
Fraiberg, Milana.....	WP 464	Fritzemeier, Kai.....	ThP 401	Gagnon-Carignan, Sofi.....	TP 255
Francavilla, Chiara.....	MP 494	Froehlich, Sophie.....	ThP 435	Gagnon-Carignan, Sofi.....	TP 258
Francesconi, Kevin A.....	WP 277	Froehlich, Kevin.....	WOE pm 2:30	Galan, Jacob.....	MP 613
Francese, Simona.....	WP 194	Fröhlich, Ulf.....	MP 103	Galan, Jorge.....	MP 530
Francese, Simona.....	WP 197	Fromion, Vincent.....	ThP 460	Galant, Ashley.....	TP 639
Francese, Simona.....	WP 432	Frost, Dustin.....	TP 576	Galarini, Roberta.....	MP 403
Franchini, Kleber G.....	TP 206	Frost, Dustin.....	TP 447	Galchev, Vladimir.....	TP 523
Franchini, Kleber Gomes.....	WP 573	Frost, Gregory J.....	MP 109	Galchev, Vladimir I.....	TP 588
Franchini, Kleber Gomes.....	WP 574	Fu, Kai.....	MOA pm 3:50	Galetskiy, Dmitry.....	MP 414
Francisco, Manuel.....	TP 286	Fu, Kai.....	ThP 396	Galezowska, Angelika.....	MP 121
Franck, Julien.....	ThP 425	Fu, Kai.....	TP 381	Galhena, Asiri.....	MP 021
Franck, William L.....	WP 529	Fu, Lijuan.....	WP 256	Galhena, Asiri.....	TP 033
Franck, William L.....	MP 519	Fu, Mingkun.....	ThP 296	Galisson, Frederic.....	ThP 499
Franck, William L.....	TP 385	Fu, Qin.....	WP 511	Gall, Nicolay.....	TP 075
Franclyn, Christopher.....	ThP 504	Fu, Xiaoyun.....	TP 580	Gall, Walter.....	WP 681
Francoleon, Deborah R.....	MP 537	Fu, Yan.....	TP 380	Gallagher, Patrick.....	TP 568
Francoleon, Deborah R.....	ThOC pm 2:50	Fu, Yan.....	WP 073	Gallagher, Richard.....	TP 250
Frank, Aaron J.....	MP 394	Fu, Yan.....	WP 404	Gallagher, Richard T.....	TP 080

INDEX OF AUTHORS

Galli, Matilde	TP 549	Gardner, Michael	WP 374	Geltenpoth, Helma	TP 053
Galli Kienle, Marzia	TP 649	Gargalovic, Peter	MP 263	Gentzel, Marc	TP 467
Gallien, Sebastien	ThOE am 08:30	Garge, Nikhil	WP 528	Geoghegan, Kieran F.	TP 110
Gallien, Sebastien	WP 516	Garge, Nikhil	WP 374	George, John E.	TP 371
Gallien, Sebastien	MP 106	Garimella, Sandilya	TP 034	George, Sebastian	MP 108
Galligan, James	TP 323	Garimella, Sandilya	ThP 036	Georgiadis, Millie M.	ThP 563
Galligan, James	ThP 493	Garin, Jérôme	MP 683	Gerace, Enrico	TP 326
Gallo, James M.	WP 416	Garnett, Shaun	ThP 662	Gerber, Bernd	TP 615
Gamage, Chaminda M.	ThP 042	Garnier, Nicolas	WP 083	Gerber, Isak	MP 479
Gamage, Chaminda M.	MP 050	Garofolo, Fabio	MP 142	Gerber, Scott	ThP 633
Gamage, Chaminda M.	WP 494	Garofolo, Fabio	MP 151	Gerber, Scott A.	MP 680
Gamage, Chaminda M.	WP 495	Garofolo, Fabio	MP 150	Gerber, Scott A.	TP 542
Gamble, Donald	WP 320	Garofolo, Fabio	MP 149	Gerber, Scott A.	MOA am 09:30
Gamble, Heather	WP 320	Garofolo, Fabio	MP 144	Gerber, Scott A.	MP 459
Gamble, Tanya	ThP 295	Garofolo, Fabio	MP 145	Gerbig, Stefanie	ThP 393
Gamble, Tanya	MOF pm 3:30	Garofolo, Fabio	MP 147	Gerbig, Stefanie	ThOG pm 2:30
Gambo Da Costa, Goncalo	TP 320	Garofolo, Fabio	MP 143	Gerbig, Stefanie	ThP 443
Gamez, Roberto	MP 273	Garofolo, Fabio	MP 146	Gerfault, Laurent	TOA pm 3:50
Gan, Chee Yuen	WP 356	Garofolo, Fabio	MP 148	Gerger, Renato PC	ThP 289
Gan, Liang-Shang	ThP 193	Garrett, Debra	TP 122	Gerhards, Petra	MP 071
Gan, Yutian	MP 571	Garrett, Timothy	TP 412	Germain, Ronald	MP 511
Gandhi, Puja	MP 563	Garrett, Timothy J.	MP 239	German, Bruce	ThP 484
Gang, David	WP 426	Garrett, Timothy J.	WP 409	German, Bruce	MP 274
Gangoiti, Jon A.	TP 684	Garrett, Wesley	MOE pm 3:50	German, Bruce	TOG am 09:10
Ganief, Tariq	ThP 662	Gartner, Anton	TP 711	German, Bruce	MP 276
Ganis, Barbara	WP 001	Garver, John	ThOB am 08:50	German, J. Bruce	MP 275
Ganis, Barbara	WP 173	Garza, Dan	TP 703	German, J. Bruce	MP 277
Ganka, Tamara	WP 672	Gasca-Aragon, Hugo	ThP 649	German, J.B.	ThP 275
Ganno-Sherwood, Michelle	WP 117	Gasch, Audrey	MOA am 09:10	Germann, Monica	MP 197
Ganz, Norbert	ThP 099	Gasch, Audrey	TP 400	Geromanos, Scott	TOA am 09:30
Gao, Beile	MP 530	Gasch, Audrey P.	ThP 519	Geromanos, Scott	MP 584
Gao, Benbo	TP 703	Gaskell, Simon J.	MP 451	Geromanos, Scott	ThP 021
Gao, Bing	TP 634	Gaskell, Simon J.	WOB am 08:50	Geromanos, Scott	WP 400
Gao, Bo	MP 180	Gaspar, Andras	TP 285	Geromanos, Scott	MP 585
Gao, Di	TP 177	Gaspar, Gerald L.	WP 428	Geromanos, Scott	ThOE am 09:50
Gao, Jinshan	MP 031	Gassel, Margy	MP 368	Geromanos, Scott	TP 145
Gao, Jinshan	TP 289	Gathungu, Rose	TP 233	Gerostamoulos, Dimitri	ThOE am 09:10
Gao, Jun	TP 325	Gatson, Joshua	MP 194	Gershon, Paul	WP 044
Gao, Lan	MP 188	Gatti, Richard A.	WP 396	Gershon, Paul	ThP 514
Gao, Xiang	WP 306	Gau, Brian C.	MP 644	Gershon, Paul	TP 700
Gao, Xiaoli	ThP 255	Gau, Brian C.	ThP 665	Gershon, Paul	ThP 412
Gao, Yang	WP 178	Gaucher, Sara	ThP 233	Gershon, Paul	ThP 387
Gao, Yi-Qin	ThP 558	Gaucher, Sara P.	ThP 209	Gertsch, Werner	TP 220
Gao, Yuan	MP 625	Gaudin, Mathieu	ThP 269	Gertsman, Ilya	TP 684
Gao, Yuan	ThOF pm 3:30	Gauthier, Marie-Lou	WP 278	Gessel, Megan	TOD pm 4:10
Gao, Yue	WP 108	Gauvin, Caroline	ThP 189	Gessel, Megan M	ThP 668
Gapeev, Alexei	ThP 654	Gavrik, Mikhail	WP 330	Getnet, Derese	TP 638
Gaquere, Emmanuel	ThP 231	Gaydos, Charlotte	MP 552	Geyer, Roland	WP 155
Garai, Kanchan	TP 486	Gaynor, Deneen	ThP 630	Ghanate, Avinash	MP 333
Garai, Kanchan	MP 644	Ge, Helen	TP 616	Ghantasala, Sameer Kumar	ThP 697
Garand, Etienne	ThP 011	Ge, Helen	MP 427	Ghantasala, Sameer Kumar	ThP 696
Garand, Etienne	MOC pm 4:10	Ge, Hui	TP 703	Ghatak, Payel	ThP 137
Garbis, Spiros D.	ThP 676	Ge, Liehui	MP 267	Ghiban, Cornel	MP 515
Garcia, Aldo	MP 326	Ge, Ying	TP 537	Ghobarah, Hesham	MOF pm 3:30
Garcia, Benjamin	ThP 621	Ge, Ying	MP 559	Ghobarah, Hesham	TP 253
Garcia, Benjamin	ThOA pm 3:50	Ge, Ying	TP 713	Ghobarah, Hesham	TP 222
Garcia, Benjamin	MP 513	Geahlen, Robert	TP 533	Ghobarah, Hesham	TP 221
Garcia, Benjamin	WP 514	Geahlen, Robert	MP 480	Ghobarah, Hesham	ThP 171
Garcia, Benjamin	ThP 620	Geahlen, Robert	MP 613	Ghobarah, Hesham	WOG pm 3:30
Garcia, Benjamin	TP 428	Geahlen, Robert	WOA pm 2:30	Ghobarah, Hesham	MOF am 10:10
Garcia, Benjamin	MP 470	Gearing, Marla	WP 393	Ghobarah, Hesham	WP 092
Garcia, Benjamin	TP 430	Gearing, Marla	WP 592	Ghosh, Banibrata	ThP 230
Garcia, Benjamin	WP 710	Gebefugi, Istvan	ThP 256	Ghosh, Dipankar	MP 411
Garcia, Benjamin	TP 433	Gebhardt, Christoph	ThP 085	Ghosh, Dipankar	WP 323
Garcia, Fernando	ThP 135	Geddes, Brad	TP 703	Ghosh, Mousumi	TOA am 10:10
Garcia, Miguel	MP 599	Geer, Lewis Y.	ThOA am 08:50	Ghosh, Rajoshi	MP 272
Garcia, Thelma Y.	MP 368	Gehman, John D.	TP 505	Giacomo, Jason	ThP 164
García, Ileana	MP 344	Geier, Florian	MP 317	Giacomo, Jason	WP 045
García, Miguel	ThP 595	Geiger, Tamar	TP 641	Giambra, Anna Marie	MP 199
Garcia-Ordóñez, Ruben	TP 480	Geiser, Laurent	ThP 390	Giambra, Anna Marie	MP 200
Gard, Janice	WP 336	Gelb, Michael	MP 341	Gianazza, Erica	TP 649
Gardell, Stephen	MP 313	Gelb, Michael	MP 342	Giancotti, Valeria	MP 660
Garden, Simon J.	MP 040	Gelb, Michael H.	MP 348	Gianino, Mark	WP 401
Gardinali, Piero	MP 373	Gelb, Michael H.	MP 343	Giannone, Richard	MOE pm 3:30
Gardinali, Piero	WP 309	Gelhaus, Stacy	MP 261	Giannone, Richard J.	TP 388
Gardinali, Piero R	MP 372	Geller, Jill T.	WP 608	Giannone, Richard J.	MP 207
Gardinali, Piero R	MP 374	Geller, Jill T.	TP 570	Giardina, Matthew	WP 074

INDEX OF AUTHORS

Giardina, Matthew	TP 022	Glasmachers, Albrecht	ThP 063	Good, David M.	MP 430
Gibert, Josep M ^a	MP 344	Glatter, Timo	WP 525	Goodacre, Roy	ThP 162
Gibert, Roger	MP 344	Glauner, Thomas	MP 403	Goodin, Erin	TP 245
Giblin, Daryl	WP 049	Glauner, Thomas	MP 423	Goodlett, Dave	MP 442
Giblin, Daryl	WP 050	Glauner, Thomas	WP 222	Goodlett, David R.	TP 055
Gibson, Bradford	WP 459	Glauner, Thomas	WP 321	Goodlett, David R.	MP 250
Gibson, Bradford W.	ThP 512	Gledhill, Antonietta	TP 094	Goodlett, David R.	MP 249
Gibson, Bradford W.	WP 465	Glick, James	MP 305	Goodlett, David R.	WP 351
Gibson, Bradford W.	MP 668	Glick, James	TP 312	Goodlett, David R.	MP 203
Gibson, Bradford W.	ThP 397	Glinski, Mirko	ThP 099	Goodlett, David R.	WOE am 08:30
Gibson, David	TP 660	Glish, Gary L.	ThP 052	Goodlett, David R.	MP 441
Gibson, Graham	WP 092	Glish, Gary L.	WP 067	Goodlett, David R.	MP 522
Gibson, Graham	MOF pm 3:30	Glish, Gary L.	WP 005	Goodlett, David R.	WP 588
Gibson, John J.	ThP 353	Glish, Gary L.	MP 111	Goodlett, David R.	MP 587
Giddings, Morgan	MP 205	Glish, Gary L.	MP 365	Goodman, Keith	WP 116
Gien, K. Bradley	ThP 110	Glish, Gary L.	WP 478	Goodwin, Cody	TP 152
Gies, Anthony P.	ThOC am 09:50	Glish, Gary L.	WP 502	Goodwin, Cody	TP 147
Giessing, Anders M. B.	MP 302	Glish, Gary L.	WP 497	Goodwin, Michael	ThP 087
Gigante, Bill	WP 006	Glish, Gary L.	MP 053	Goodwin, Richard J.	ThP 434
Gigmes, Didier	TP 338	Glish, Gary L.	MP 112	Goossens, Pierre	MP 389
Gigmes, Didier	TP 339	Glish, Gary L.	MP 054	Gordin, Alexander	ThP 217
Gigmes, Didier	WP 062	Glocker, Michael O.	TP 615	Gordin, Alexander	MP 068
Gijon, Miguel	MP 255	Glocker, Michael O.	ThP 652	Gordon, Elizabeth	ThP 527
Gil, Geun-Cheol	ThP 691	Glocker, Michael O.	ThP 520	Gordon, Jeffrey I.	MP 531
Gilbert, Bernard	WP 201	Glocker, Michael O.	WP 596	Gordon, Robert J.	ThP 433
Gilbert, Jeffrey	TOB am 08:50	Gloudemans-Rijkers, Rianne	MOF pm 3:10	Gorenstein, Marc V.	ThP 021
Gilbert, Joshua	ThP 541	Glover, Matt	TP 142	Gorfien, Stephen F.	ThP 657
Giles, Kevin	MP 059	Glover, Matt	TP 145	Gorin, Andrey	MP 468
Giles, Kevin	ThP 046	Gluck, Florent	ThP 390	Gorman, Gregory	WP 261
Giles, Kevin	WOB am 08:50	Glueckmann, Matthias	MP 268	Gorman, Gregory	WP 265
Giles, Kevin	WOE pm 3:30	Glunde, Kristine	MOD pm 3:50	Gorman, Nicole	WP 639
Giles, Kevin	TP 121	Go, David	ThOG pm 3:10	Gormanns, Philipp	ThOA pm 2:50
Giles, Roger	TP 075	Go, Eden	ThP 586	Gormley, Michael	TP 455
Giliberti, Jacqueline	ThOE pm 3:30	Go, Eden	ThP 481	Gornstein, Alexandr	ThP 683
Gill, Christopher G.	MP 387	Goda, Takahiro	TP 343	Gorovits, Elena	WP 279
Gill, Christopher G.	ThP 356	Godat, Rebecca L.	WP 620	Gorshkov, Michael V.	TP 101
Gill, Christopher G.	ThP 355	Godfrey, Ruth	ThP 055	Gorshkov, Mikhail V.	MP 430
Gill, Christopher G.	ThP 035	Godfrey, Ruth	MP 089	Gorshkov, Mikhail V.	MP 443
Gilles, Christopher	MP 422	Godugu, Bhaskar	ThOA am 09:50	Gorshkov, Mikhail V.	MP 227
Gilles, Nicolas	MP 604	Goedecke, Niels	TP 300	Gorshkov, Vladimir	MP 497
Gillespie, Aubri	TP 634	Goetz, Sebastian	TP 318	Gorycki, Peter	TOF pm 2:30
Gillespie, Ronald	ThP 644	Goh, Evelyn	MP 257	Goshawk, Jeff	TP 225
Gillessen, Silke	MP 690	Goh, Evelyn M.L.	ThP 287	Goshawk, Jeff	MOF am 09:50
Gillet, Ludovic	WP 707	Goh, Alicia	MP 272	Goshawk, Jeff	TP 224
Gillet, Ludovic	WP 091	Gohdes, Mark	WP 272	Goshe, Michael	WP 579
Gillet, Ludovic	ThP 395	Gokce, Emine	WP 529	Goshe, Michael	MOE pm 2:30
Gillet, Ludovic	MP 596	Gokce, Emine	TP 385	Goshe, Michael	TP 584
Gillette, Michael	TP 645	Gokulrangan, Giridharan	MP 098	Goshe, Michael	ThP 513
Gilliland, Kathryn	ThP 117	Gokulrangan, Giridharan	TP 705	Goswami, Sumanta	WP 235
Gillingwater, Scott	TP 137	Gokulrangan, Giridharan	TP 550	Goto, Rieko	MP 311
Gilmere, Ian	TP 032	Golan, Amir	WP 453	Goto-Inoue, Naoko	TP 406
Gilmere, Ian	TP 030	Goldfarb, David S.	ThP 197	Gough, Ronan	ThP 564
Gilmere, Jason M.	TP 542	Goldman, Radoslav	ThP 579	Gounarides, John	ThP 227
Gingras, Anne-Claude	WP 707	Goldstein, Harris	TP 587	Govindarajan, Sridhar	ThP 494
Gingras, Anne-Claude	ThP 406	Golf, Ottmar	ThP 443	Gowd, K. H.	ThP 456
Gingras, Anne-Claude	MP 610	Golick, Dan	ThP 021	Gowda, G.A.Nagana	WP 216
Gingrich, David	WP 098	Golinelli, Béatrice	MP 295	Gozal, Yair	WP 393
Ginn, Elaine	WP 283	Golling, Sabrina	WOF pm 2:30	Gozzo, Fabio C.	WP 572
Ginsburg, Erika	MP 677	Goloborodko, Anton	MP 227	Gozzo, Fabio C.	ThP 289
Giordano, Dominic	WP 392	Goloborodko, Anton A.	MP 430	Gozzo, Fabio C.	TP 206
Giordano, Giuseppe	WP 227	Goloborodko, Anton A.	MP 443	Gozzo, Fabio Cesar	WP 574
Giovannelli, Jean-François	TOA pm 3:50	Gombos, Zoltán	TP 396	Gozzo, Fabio Cesar	WP 573
Girdaukas, Gary	ThP 439	Gomes, Alexandre F.	TP 206	Gqamana, Putuma P.	ThP 662
Giri, Rajan	WP 240	Gomes, Alexandre F.	WP 572	Grace, Mary	ThP 334
Girod, Marion	TP 012	Gomez, Jose	WP 500	Graham, David	TP 626
Giubbina, Marina F.	MP 380	Gómez, Santiago	MP 131	Graham, David R. M.	ThP 611
Giuliani, Alexandre	ThP 491	Gonçalves Dos Santos, Vanessa	MP 040	Graham, Robert Lj.	WP 705
Giuliani, Alexandre	TP 016	Gonçalves dos Santos, Vanessa	WP 020	Graham, Robert Lj.	WP 604
Giuliani, Alexandre	WP 025	Gong, Chao	WP 375	Graham, Robert Lj.	WP 393
Giuliani, Alexandre	ThOD pm 4:10	Gonnet, Florence	WP 549	Graham, Robert Lj.	MP 455
Givogri, Maria Irene	ThP 292	Gontijo Vaz, Boniek	WP 020	Graichen, Adam M.	WP 016
Gladen, Shannon	TP 715	Gonzales, Michelle	TP 428	Gramolini, Anthony	WP 508
Glaskin, Rebecca S.	MP 057	Gonzales, Rosalia	ThP 202	Grandi, Paola	ThP 616
Glasmachers, Albrecht	ThP 078	González-Jimenez, Esperanza	ThP 614	Grandis, Jennifer R.	WP 440
Glasmachers, Albrecht	TP 421	Good, David	MOA pm 2:50	Grange, Andrew	TP 025
Glasmachers, Albrecht	TP 051	Good, David	WP 486	Grangeat, Pierre	TOA pm 3:50
		Good, David	TP 397	Granholm, Viktor	WP 368

INDEX OF AUTHORS

Grannas, Amanda.....	WP 086	Grinfeld, Dmitry.....	ThP 081	Guérineau, Vincent.....	TOF pm 3:50
Grant, David.....	ThP 069	Grisham, Michael.....	ThP 010	Guerreiro, Nelson.....	MOG pm 3:30
Grant, Melissa.....	TP 456	Gritsas, Ari.....	ThP 196	Guerrero, Andrés.....	MP 131
Grant, Russell.....	WP 105	Gritsenko, Marina.....	TP 141	Guerrero, Candace.....	MP 304
Grant, Russell.....	TOG am 09:50	Gritsenko, Marina.....	WOA pm 3:10	Guevara, Francisco.....	ThP 161
Graumann, Johannes.....	ThP 626	Gritsenko, Marina A.....	ThP 647	Gugiu, Gabriel.....	MP 427
Graves, Collin.....	ThP 312	Grivet, Chantal.....	ThP 367	Gugiu, Gabriel.....	ThP 278
Gray, Anthony.....	ThP 316	Grmai, Lydia.....	ThP 654	Gugiu, Gabriel.....	TP 518
Gray, Joe.....	MP 668	Grobosch, Thomas.....	WP 364	Gugiu, Gabriel.....	TP 616
Gray, Matthew.....	TP 256	Groleau, Paule Emilie.....	ThP 362	Guha, Abhijit.....	ThP 698
Gray, Murray.....	TP 289	Groleau, Paule Emilie.....	TP 636	Guha, Nilanjan.....	TP 201
Grayson, Scott M.....	ThP 156	Gromadski, Kirill.....	MP 231	Guha, Nilanjan.....	TP 699
Grayson, Scott M.....	TP 347	Gronert, Scott.....	ThP 538	Guha, Udayan.....	ThP 592
Greco, Todd.....	MP 619	Gronert, Scott.....	ThOB pm 2:30	Guichard, Sylvie.....	ThP 507
Greco, Todd M.....	TP 530	Groseclose, M. Reid.....	TOF pm 2:30	Guillen Ahlers, Hector.....	WP 709
Greco, Todd M.....	WP 699	Groseclose, Mark R.....	ThP 422	Guillen Ahlers, Hector.....	ThP 619
Greco, Todd M.....	MP 620	Groseclose, Reid.....	TOF pm 3:30	Guingab, Joy.....	WP 649
Greco, Todd M.....	ThP 592	Grosjean, Chloe.....	WOF am 10:10	Guise, Amanda J.....	TP 530
Green, Abigail.....	MP 214	Grosjean, Chloe.....	WP 079	Gulbakan, Basri.....	ThP 144
Green, Brian.....	WP 589	Gross, Jürgen H.....	TP 056	Gulyuz, Kerim.....	ThP 007
Green, Felicia.....	TP 030	Gross, Michael.....	MP 644	Gummer, Joel P.A.....	ThP 225
Green, Felicia.....	TP 032	Gross, Michael L.....	MP 630	Gunawardena, Harsha P.....	WP 701
Green, Karin.....	WP 576	Gross, Michael L.....	MP 638	Gunawardena, Harsha P.....	MP 205
Green, Karin.....	WP 644	Gross, Michael L.....	ThP 563	Gundry, Rebekah L.....	WP 520
Green, Martin.....	TP 121	Gross, Michael L.....	ThP 665	Gunduz, Mithat.....	TP 229
Green, Martin.....	ThP 046	Gross, Michael L.....	WP 532	Gunduz, Mithat.....	TP 230
Green, Martin.....	TP 130	Gross, Michael L.....	TOE am 09:30	Guner, Huseyin.....	TP 537
Green, Martin.....	MP 059	Gross, Michael L.....	ThP 653	Guner, Huseyin.....	MP 559
Green, Roger J.....	ThP 070	Gross, Michael L.....	WP 049	Gunsalus, Robert.....	ThOC pm 2:50
Green, Ted.....	ThP 163	Gross, Michael L.....	WP 050	Gunsalus, Robert P.....	MP 537
Green-Church, Kari.....	ThP 277	Gross, Michael L.....	ThP 482	Günther, Detlef.....	MOD am 08:30
Green-Church, Kari.....	ThP 547	Gross, Michael L.....	TP 501	Guo, Baochuan.....	ThP 174
Greenhaw, James.....	WP 229	Gross, Michael L.....	TP 486	Guo, Dean.....	WP 347
Greer, Tyler J.....	TP 447	Grossmann, Jonas.....	WP 388	Guo, Hongbo.....	MP 667
Gregersen, Joshua A.....	WP 038	Grosso, John.....	MP 140	Guo, Jia.....	TP 608
Gregor, Hauke.....	TP 071	Grottemeyer, Jurgen.....	ThP 012	Guo, Jingshu.....	WP 538
Greig, Michael.....	MP 570	Grottemeyer, Jurgen.....	WP 032	Guo, Jingshu.....	MP 626
Greiner, Martin.....	TP 511	Groten, Karin.....	MP 520	Guo, Kai.....	TP 131
Greis, Kenneth D.....	ThP 506	Grotewiel, Mike.....	ThP 538	Guo, Kevin.....	WP 305
Grenier, Adam.....	TP 260	Grouzmann, Eric.....	MP 503	Guo, Kevin.....	MP 338
Grensemann, Hans.....	WOA pm 3:30	Grouzmann, Eric.....	MP 557	Guo, Kevin.....	MP 337
Grensemann, Hans.....	MP 453	Grove, Kerri.....	WP 441	Guo, Kevin.....	MP 159
Grieco, Paul.....	TP 665	Grover, Vandana K.....	WP 683	Guo, Lei.....	MP 390
Griep-Raming, Jens.....	ThOB pm 4:10	Grubb, Mary.....	TP 087	Guo, Min.....	TP 496
Griep-Raming, Jens.....	MP 572	Grubhoffer, Libor.....	MP 550	Guo, Mingquan.....	TP 529
Griffin, Julian L.....	ThP 265	Gruening, Anja.....	WP 358	Guo, Xiao.....	TP 537
Griffin, Patrick.....	TP 481	Grün, Christian.....	TP 344	Guo, Xu.....	WP 306
Griffin, Patrick R.....	MOB am 09:10	Grunwald, Douglas.....	MP 481	Guo, Xu.....	WP 221
Griffin, Patrick R.....	WP 555	Gu, Dan.....	ThP 199	Guo, Xu.....	MP 588
Griffin, Patrick R.....	TP 479	Gu, Guodong.....	MP 118	Guo, Xu.....	MP 589
Griffin, Patrick R.....	TP 480	Gu, Hongbo.....	MP 662	Guo, Y. Carrie.....	WP 311
Griffin, Patrick R.....	MOA am 10:10	Gu, Hongbo.....	WP 704	Guo, Yangyang.....	TP 254
Griffin, Tim.....	MP 448	Gu, Ming.....	WP 107	Guo, Yuzhu.....	MP 085
Griffin, Tim.....	TP 398	Gu, Ming.....	MP 082	Gupta, Kallol.....	ThP 456
Griffin, Tim.....	TP 379	Gu, Ming.....	TP 096	Gupta, Sayan.....	MP 632
Griffin, Tim.....	TP 548	Gu, Xiaomei.....	TP 092	Gupta, Sayan.....	MP 640
Griffin, Tim.....	MP 689	Gu, Zezong.....	TP 563	Gupta, Sayan.....	TOD am 10:10
Griffith, Wendell P.....	WP 538	Gu, Zheming.....	TP 173	Gupte, Raeesa.....	WP 243
Griffith, Wendell P.....	MP 626	Guallar-Hoyas, Cristina.....	ThP 037	Gura, Sigalit.....	MP 397
Griffiths, John R.....	MP 580	Guan, Fuyu.....	WP 099	Gushue, Shantel.....	TP 451
Griffiths, John R.....	WP 636	Guan, Fuyu.....	ThP 374	Gustavsson, Lena.....	TOF pm 3:10
Griffiths, Paul.....	WP 169	Guan, Shenheng.....	TOD am 09:50	Gut, Ivo G.....	WP 581
Griffiths, Rian.....	TP 425	Guan, Shenheng.....	ThP 459	Guthals, Adrian.....	TP 386
Griffiths, William J.....	MP 241	Guan, Xiaoyan.....	MP 516	Gutierrez, Jose.....	ThP 216
Griffiths, William James.....	TOC pm 2:30	Guanghou, Shui.....	MP 272	Gutierrez, Sarah M.....	MP 275
Grigorean, Gabriela.....	TP 462	Guay, Johane.....	ThP 320	Gutierrez-Guevara, Marcelino.....	WP 420
Grigoryan, Marine.....	MP 228	Gucciardi, Antonina.....	WP 227	Güzel, Coskun.....	TP 595
Grigoryev, Anton.....	ThP 359	Gucek, Marjan.....	WP 696	Gwaltney, Steven.....	WP 501
Grimm, Casey C.....	ThP 326	Gucek, Marjan.....	TP 448	Gygi, Steven.....	MP 493
Grimm, Rudolf.....	MP 276	Gucek, Marjan.....	WP 406	Gygi, Steven.....	TP 461
Grimm, Rudolf.....	WOD am 08:50	Gucek, Marjan.....	WP 460	Gygi, Steven.....	MP 440
Grimm, Rudolf.....	MP 274	Gucinski, Ashley.....	WP 503	Gygi, Steven.....	TP 702
Grimm, Rudolf.....	MP 277	Gudihal, Ravindra.....	TP 511	Gygi, Steven.....	TP 591
Grimm, Rudolf.....	TOG am 09:10	Guelorget, Amandine.....	MP 295	Gygi, Steven.....	WP 613
Grimsby, Susanne.....	ThP 623	Guenther, Sabine.....	ThOE am 10:10	Gygi, Steven.....	MOA am 08:30
Grimsrud, Paul A.....	ThP 522	Guenther, Sabine.....	MOD am 09:50	Gygi, Steven P.....	TP 703
Grimwood, Sarah.....	MOG am 09:10	Guérineau, Vincent.....	MP 295	Gygi, Steven P.....	WP 691

INDEX OF AUTHORS

Gygi, Steven P.....	ThOA pm 4:10	Hammad, Loubna	MP 556	Harada, Takanori.....	MP 318
Güntert, Andreas.....	TP 686	Hammad, Loubna	MP 262	Harada, Takanori.....	WP 121
Haas, Ruth	TP 223	Hammad, Loubna	ThP 266	Harada, Takanori.....	WP 285
Haas, Wilhelm	TP 702	Hammel, Yves-Alexis	ThP 124	Harb, Mahdi M.	ThP 028
Haas, Wilhelm	WP 691	Hammock, Bruce D.....	ThP 274	Harb, Mahdi M.	ThP 051
Haas, Wilhelm	MP 440	Hammond, John	WP 408	Harb, Mahdi M.	WP 338
Haas, Wilhelm	MP 493	Hammond, Matthew.....	ThP 149	Harb, Mahdi M.	WP 066
Haas, Wilhelm	MOA am 08:30	Hammond, Matthew.....	MP 577	Harb, Mahdi M.	WP 019
Habbach, Schaehti.....	ThP 659	Hammoud, Zane	WP 216	Harder, Lea M.	TP 437
Haber, Steve	TP 458	Hampton, Andrew	MP 054	Hardick, Justin	MP 552
Habib, Fouad K	ThP 681	Hamuro, Yoshitomo	TP 503	Hardie, Darryl.....	TP 689
Hachey, David L.....	WP 683	Hamuro, Yoshitomo	TP 485	Hardie, Darryl.....	WP 223
Hachey, David L.....	TP 676	Hamvas, Aaron	TP 670	Hardie, Darryl B.....	ThP 685
Hacker, Timothy A.....	MP 559	Han, Chia-Li	ThP 686	Hardies, Stephen C.....	TP 393
Hackman, Maria.....	TP 245	Han, Dohyun	TP 531	Hardt, Markus.....	TP 468
Hacohen, Nir	ThP 500	Han, Futian	WP 253	Hardwick, Christopher	ThP 324
Hadjar, Omar	ThP 064	Han, Han	ThP 223	Hargraves, Tiffanie	ThP 382
Haeussler, Dagmar J. F.	ThP 495	Han, Jun	TP 471	Harkewicz, Richard	WOC am 10:10
Haffey, Wendy D.....	ThP 506	Han, Jun	MOB pm 2:30	Harriman, Shawn	WP 112
Hafner, Julie.....	TP 457	Han, Jun	WP 223	Harrington, Jason S	WP 372
Hage, David	WP 593	Han, Jun	ThP 560	Harrington, Michael	WP 531
Hager, James	ThP 039	Han, Jun	WP 449	Harris, Don.....	WP 426
Hagner- McWhirter, Åsa	ThP 623	Han, Jun	TP 526	Harris, Geoff.....	WP 320
Hahn, Chang-Gyu.....	TP 603	Han, Jun	ThP 353	Harris, Glenn A	TP 033
Hahne, Hannes	ThP 584	Han, Jungsoo.....	ThP 236	Harris, Glenn A	TP 021
Haidacher, Sigmund	TP 605	Han, Liang	TP 179	Harris, Jacob	MP 646
Haider, Shamim.....	ThP 092	Han, Linjie	TOE am 09:50	Harris, Jacob	MP 651
Hail, Mark	MP 296	Han, Myung Sub.....	MP 359	Harris, Melissa S	TP 479
Hajslava, Jana	WP 222	Han, Na-Young	WP 630	Harris, Peter C.	TP 650
Hakala, Kevin	TP 393	Han, Sang Beom	ThP 170	Harris, Raymond	WP 441
Hakansson, Kristina.....	TP 176	Han, Sang Beom	ThP 168	Harris, Thomas K.....	TP 100
Hakansson, Kristina.....	MOC am 09:30	Han, Sang Beom	ThP 169	Harrison, Alex G.	MOC am 08:30
Hakansson, Kristina.....	TP 177	Han, Xi	TP 441	Harrison, David	ThP 434
Hakansson, Kristina.....	TP 541	Han, Xianlin.....	TOC pm 3:30	Harrison, Mark W.	MP 121
Hakansson, Kristina.....	WP 474	Han, Xiumei	TP 274	Harrison, Stephanie	ThP 177
Hakansson, Kristina.....	WP 350	Hanan, Garry.....	WP 339	Harron, Andrew.....	ThP 437
Hakansson, Kristina.....	MP 490	Hanash, Samir.....	ThP 582	Hars, Gyorgy.....	ThP 045
Hale, Wendi.....	TP 541	Hanash, Samir.....	ThP 629	Harsha, H. C.....	TP 622
Halfinger, Bernhard	TP 429	Hanc, Pavel	MP 606	Harsha, H. C.....	TP 635
Halfinger, Bernhard	TP 539	Hancock, William.....	TP 115	Harsha, H. C.....	ThP 697
Halfinger, Bernhard	ThP 488	Hancock, William.....	TP 632	Harsha, H. C.....	ThP 696
Halfter, Willi	TP 628	Hancock, William.....	ThP 627	Harshman, Sean W.	WP 595
Halket, John M.....	WP 289	Hancock, William.....	WOD am 10:10	Hart, Philippa.....	WP 432
Halket, John M.....	TP 364	Hancock, William S.	TP 107	Harter, Courtney	MP 551
Hall, Adam B	WOB am 09:30	Handel, Tracy	MOB am 08:30	Hartler, Jürgen	ThP 263
Hall, Adam B	ThP 376	Haney, Paul.....	MP 213	Hartmann, Katarina	TP 266
Hall, Elizabeth.....	WP 672	Hankin, Joseph A.....	MP 255	Hartmer, Ralf.....	ThP 085
Hall, Kathleen	ThP 266	Hankins, Jessica.....	MP 234	Hartnett, James R.	WP 620
Hall, Michael.....	MOG am 09:50	Hanley, Luke	WP 443	Hartshorn, Kevan L.....	WOD am 08:30
Hall, Nicholas.....	ThP 335	Hanley, Luke	MP 586	Hartshorn, Michael.....	TP 224
Hall, Stacy D.	TP 509	Hanley, Luke	ThP 433	Harvey, David J.....	MP 290
Hall, Steven C.....	WP 608	Hanley, Luke	WP 428	Harwani, Suhash	MP 368
Hall, Steven C.....	MP 668	Hannibal-Bach, Hans Kristian	MP 269	Hasegawa, Hideki	MP 395
Hall, Steven C.....	TOA am 10:10	Hanning, Gary	ThP 257	Hasegawa, Hideki	ThP 080
Hall, Steven C.....	TP 570	Hanold, Karl	TP 074	Haselberg, Rob	TP 126
Hall, Steven C.....	WP 635	Hanrieder, Jörg	WP 430	Haselmann, Kim F.	TP 159
Hall, Thomas	WP 196	Hanrieder, Jörg	MOD pm 3:30	Hashi, Yuki	MP 179
Hall, Thomas	MP 551	Hansen, Anne-Marie	TP 617	Hashimoto, Masahiro	TP 345
Hall, Zoe.....	WOB pm 2:50	Hansen, Brett	TOE pm 2:50	Hashimoto, Masahiro	TP 346
Halligan, Brian	WP 616	Hansen, Kirk.....	TP 633	Hashimoto, Masahiro	MP 240
Halligan, Brian	WP 709	Hansen, Kirk.....	MP 435	Hashimoto, Masahiro	ThP 333
Hallikainen, Merja	TP 675	Hansen, Kirk.....	WP 637	Hashimoto, Yuichiro	MP 395
Halonen, Marilyn	WP 657	Hansen, Steen H.	WP 427	Hashimoto, Yuichiro	ThP 080
Halvey, Patrick J.	MP 693	Hansson, Gunnar.....	ThP 487	Haslam, Stuart M	MP 278
Halvey, Patrick J.	TP 691	Hansson, Gunnar C.....	TP 185	Hassiss, Maria	WP 638
Ham, Amy-Joan	TP 685	Hao, Piliang	WP 470	Hastings, Michael	TOB am 08:50
Ham, Amy-Joan L.....	TOA am 09:10	Hao, Qiang	WP 484	Hatase, Hiroshi	TP 182
Ham, Amy-Joan L.....	WOA pm 4:10	Hao, Qiang	WP 485	Hatch, Gary	WP 675
Ham, Amy-Joan L.....	TP 397	Hao, Yujun	WP 611	Hatcher, Nathan G.	TP 648
Hamani, Clemant	ThP 131	Hao, Zhiqi	ThOE am 08:30	Hatcher, Patrick	MOE am 09:50
Hamann, Andrea	ThP 688	Hao, Zhiqi	MP 106	Hatcher, Patrick	WP 086
Hamberg, Mats	MP 241	Hao, Zhiqi	WP 015	Hathaway, Michael S.....	ThP 318
Hambly, David	ThP 644	Harada, Ken-ichi	ThP 329	Hathout, Yetrib	MP 669
Hambly, David	MP 633	Harada, Takanori.....	WP 296	Hathout, Yetrib	TP 655
Hamdane, Djemel	MP 295	Harada, Takanori.....	WP 295	Hatsis, Panos.....	MOF pm 4:10
Hamilton, Sarah	MP 553	Harada, Takanori.....	TP 011	Hatsis, Panos.....	TP 242
Hamm, Gregory	TOF pm 2:50	Harada, Takanori.....	ThP 243	Hattan, Stephen J.....	WP 651

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Hattan, Stephen J.	ThP 159	Heck, Albert J.R.	WOB pm 2:30	Henion, Jack D.	ThOE am 09:30
Hattan, Stephen J.	TP 389	Heck, Albert J.R.	TP 156	Henion, Jack D.	TOF pm 4:10
Haulenbeek, Jonathan.....	ThP 161	Heck, Albert J.R.	TP 549	Henley, Alan.....	WP 224
Hauschild, Jan-Peter.....	MP 103	Heck, Albert JR.....	WP 525	Hennrich, Marco.....	WOA pm 2:50
Hauschild, Jan-Peter.....	WOE pm 2:30	Heckendorf, Christian.....	ThP 388	Henrich, Christoph.....	ThP 384
Havard, Guy.....	TP 267	Hecker, Michael.....	ThP 460	Henriksen, Peter.....	WP 698
Havard, Guy.....	TP 270	Hector, Ronald.....	MP 293	Henry, Hugues.....	WP 156
Havard, Guy.....	WP 146	Hedrick, Joe.....	WP 558	Henry, Mark.....	MP 136
Haverland, Nicole.....	WP 568	Hedrick, Joe.....	WP 556	Henson, Peter M.....	MP 255
Havlicek, Vladimir.....	TP 066	Heegaard, Niels H.....	ThP 591	Henstra, Anne.....	MP 537
Havlicek, Vladimir.....	WP 541	Heegel, Robert A.....	TP 160	Her, Guor-Rong.....	ThP 577
Havlicek, Vladimir.....	TP 476	Heeren, Ron M.A.....	TP 344	Her, Guor-Rong.....	ThP 041
Havlicek, Vladimir.....	ThP 418	Heeren, Ron M.A.....	MOD pm 3:50	Her, Guor-Rong.....	ThP 015
Hawke, David.....	Special 001	Heeren, Ron M.A.....	WP 433	Herath, Kithsiri.....	WP 665
Hawkrige, Adam.....	ThP 093	Heeren, Ron M.A.....	WP 446	Herath, Kithsiri.....	ThP 533
Hawkrige, Adam.....	WP 643	Heeren, Ron M.A.....	WP 434	Herbst, John.....	WP 259
Hawkrige, Adam.....	WP 236	Heeren, Ron M.A.....	ThOA pm 2:30	Hercules, David M.....	ThOC am 09:50
Hawkrige, Adam M.....	TP 610	Heeren, Ron M.A.....	ThP 077	Herfurth, Frank.....	MP 108
Hayakawa, Eisuke.....	TP 466	Heeren, Ron M.A.....	ThOC am 10:10	Herlert, Alexander.....	MP 108
Hayakawa, Eisuke.....	MP 466	Heeren, Ron M.A.....	MP 094	Herman, Joseph L.....	ThP 133
Hayakawa, Yoshihiro.....	MP 123	Heeren, Ron M.A.....	ThP 426	Herman, Petr.....	TP 476
Hayakawa, Yoshihiro.....	MP 119	Heeren, Ron M.A.....	MOD am 09:30	Herniman, Julie.....	MP 301
Hayasaka, Takahiro.....	WP 423	Heffron, Fred.....	WP 220	Hernychova, Lenka.....	MP 489
Hayasaka, Takahiro.....	TP 406	Hegeman, Adrian D.....	ThP 241	Heron, Scott.....	MP 250
Hayasaka, Takahiro.....	WP 167	Hegeman, Adrian D.....	MP 335	Heron, Scott.....	TP 055
Hayashi, Akio.....	WP 225	Hegeman, Adrian D.....	TP 193	Heron, Scott.....	MP 203
Hayashi, Mike.....	TP 217	Hegeman, Adrian D.....	TP 209	Heron, Scott.....	WOE am 08:30
Hayen, Heiko.....	TP 053	Heide, Heinrich.....	ThP 688	Herrero, Rebeca.....	MP 131
Hayes, Angela.....	TP 265	Heideman, Warren.....	MP 481	Herring, Andrew.....	TP 284
Hayes, Jaclyn.....	MP 175	Heilier, Jean-Francois.....	ThOG am 09:50	Herring, Jason.....	TP 712
Hayes, Juaneka.....	MP 546	Heiling, Sven.....	ThP 231	Hersant, Yael.....	WP 549
Hayes, Roger.....	ThP 108	Heim, John.....	ThP 246	Hersberger, Katherine E.....	WP 474
Haynes, Christopher A.....	ThP 291	Heim, John R.....	ThP 253	Hersch, Stephen.....	ThOA pm 3:30
Haynes, Paul A.....	ThP 309	Heim, John R.....	WP 074	Hersman, Elisabeth.....	TP 434
Hays, Faith.....	TP 554	Hein, Dietmar.....	ThP 126	Hertkorn, Norbert.....	ThP 256
Hays, Faith.....	TP 655	Heinrichs, Jon.....	ThP 634	Herukka, Sanna-Kaisa.....	TP 675
Hazama, Hisanao.....	TP 417	Heins, Hillary.....	TP 670	Hervy IV, William Judson.....	MP 612
Hazama, Hisanao.....	TP 418	Heiser, Amy.....	MP 029	Herzog, Franz.....	WP 583
Hazebroek, Jan.....	TP 198	Hekmat, Omid.....	MP 494	Herzog, Ronny.....	WOC am 09:50
Hazen, Terry C.....	WP 608	Held, Jason.....	WP 465	Hess, Erika.....	MP 172
Hazen, Terry C.....	TP 570	Held, Jason.....	ThP 512	Hess, Sonja.....	WP 087
Hazlet, Fred.....	TP 705	Held, Jason.....	WP 459	Hess, Sonja.....	WP 705
Hazlett, Fred.....	MP 098	Held, Jason.....	MP 668	Hess, Sonja.....	MP 455
He, Fang.....	MP 692	Heller, Dennis.....	ThOE am 09:30	Hess, Sonja.....	WP 604
He, Hua-Jun.....	TP 508	Hellings, Samuel.....	MP 263	Hess, Sonja.....	TP 517
He, Huan.....	ThP 342	Helton, Rob.....	WP 472	Hesse, Dörte.....	MP 218
He, Jintang.....	TP 507	Hembrough, Todd.....	WP 164	Hestlow, Travis.....	ThP 090
He, Jintang.....	MP 672	Hembrough, Todd.....	ThP 525	Hettiarachchi, Pramesh I.....	ThOB pm 2:50
He, Jintang.....	MP 661	Henderson, Charlotte.....	WOB pm 3:10	Hettich, Robert.....	TP 557
He, Jintang.....	MP 663	Henderson, Clark.....	ThP 297	Hettich, Robert.....	ThP 402
He, Lin.....	TP 441	Henderson, Holly.....	TP 423	Hettich, Robert.....	MOE pm 3:30
He, Simin.....	WP 073	Henderson, Jeffrey P.....	ThP 335	Hettich, Robert.....	ThP 385
He, Si-Min.....	ThOA am 09:10	Hendricks, Paul.....	ThP 073	Hettich, Robert.....	MP 532
He, Si-Min.....	WP 404	Hendrickson, Chris.....	ThP 354	Hettich, Robert.....	ThOC pm 3:50
He, Si-Min.....	TOD am 09:10	Hendrickson, Chris.....	MP 558	Hettich, Robert.....	TP 620
He, Xiang.....	MP 352	Hendrickson, Chris.....	MP 086	Hettich, Robert.....	TP 621
He, Xiang.....	TP 316	Hendrickson, Chris.....	TP 305	Hettich, Robert.....	MP 207
He, Xiang.....	WP 077	Hendrickson, Chris.....	MP 087	Hettich, Robert.....	MP 212
He, Xiang.....	ThP 127	Hendrickson, Chris.....	MP 088	Hettich, Robert.....	TP 388
He, Yi.....	WP 585	Hendrickson, Christopher L.....	TP 304	Hettich, Robert.....	MP 214
Headley, John.....	MP 363	Hendrickson, Christopher L.....	MOE am 09:10	Hettich, Robert.....	MP 449
Heath, Brandi.....	MOD am 09:10	Hendrickson, Christopher L.....	MP 013	Hettich, Robert L.....	MP 531
Heath, Brandi.....	MP 542	Hendrickson, Christopher L.....	WP 081	Hettick, Justin M.....	ThP 529
Heath, Brandi.....	ThOC pm 3:10	Hendrickson, Christopher L.....	MP 102	Heuberger, Adam.....	ThP 257
Heaton, James.....	MP 196	Hendrickson, Christopher L.....	WP 037	Heudt, Laetitia.....	WP 201
Heaton, Katherine.....	TP 594	Hendrickson, Ronald.....	TP 607	Hewel, Johannes.....	MP 529
Heaton, Katherine.....	ThP 207	Hendrickson, Ronald.....	TP 693	Hewel, Johannes.....	WP 508
Hebbbar, Sarita.....	ThP 298	Hendrickson, Ronald C.....	MP 667	Hewetson, John.....	WP 232
Hebert, Alex.....	WP 463	Hendrickson, Ronald C.....	TP 648	Hewig, Art.....	MP 633
Hebert, Alex.....	ThOE am 08:50	Hendrix, Josh.....	WP 036	Hewitt, Mark.....	MP 363
Hebert, Alexander S.....	TOE pm 3:10	Hengel, Shawna.....	MP 099	Heym, Roland G.....	ThOD pm 2:30
Hebert, Alexander S.....	WP 620	Hengel, Shawna.....	TP 450	Heymann, Stephan.....	MP 602
Hebert, Nicole.....	MOE pm 4:10	Hengel, Shawna M.....	WOA am 08:50	Heywood, Matthew S.....	TP 077
Hebling, Christine M.....	WP 570	Héninger, Michel.....	ThP 071	Hicham, Benabdelkamel.....	WP 133
Heck, Albert J. R.....	WP 543	Henion, Jack.....	TP 276	Hickman, Catherine E.....	MP 673
Heck, Albert J. R.....	WOA pm 2:50	Henion, Jack.....	ThP 380	Hickman, Nickolas A.....	ThP 220
Heck, Albert J.R.....	TOG am 09:30	Henion, Jack D.....	WP 151	Hicks, Leslie M.....	TP 639

INDEX OF AUTHORS

Hicks, Leslie M.	TP 446	Hofmann, Alan F.	MP 117	Hoppel, Charles.....	TP 581
Hicks, Leslie M.	TP 194	Hofmann, Alan F.	MP 116	Hoppel, Charles.....	ThP 293
Hidy, Bruce MOG	pm 4:10	Hofmann, Thomas	MP 158	Hoppel, Charles L.	MP 349
Hietfle, Gary M.	TP 076	Hofstadler, Steven.....	ThP 216	Hopper, L. David	ThP 110
Higashi, Richard.....	MP 316	Hofstadler, Steven.....	WP 196	Hoque, Ehsan	ThP 130
Higgins, Elizabeth.....	TP 162	Hofstadler, Steven.....	MP 551	Hoque, Ehsanul	ThP 131
Higgins, Leeann	MP 448	Hogan, Marie C.	TP 650	Hoque, Md Ehsanul	WOF am 09:30
Higgins, Leeann	TP 379	Hogan, Michael	WP 375	Hoque, Shaila	WOG pm 3:30
Highley, Aaron	TP 489	Hogan, Sabine	MOG am 08:30	Hoque, Shaila	MOF am 10:10
Hildreth, Richard	MP 266	Hogendoorn, Pancras	ThP 444	Horenstein, Nicole	MOC pm 2:30
Hilger, Ryan T.....	WOF pm 3:50	Hogrefe, Holly	MP 553	Horn, David	WOD am 09:10
Hill, Alastair.....	TP 224	Hojrup, Peter.....	WP 571	Horn, Patrick	WP 451
Hill, Dennis	ThP 069	Hojrup, Peter.....	TP 377	Hornbuckle, Keri	MP 369
Hill, Jane.....	MP 543	Hojrup, Peter.....	ThP 568	Horneck, Gerda	TP 709
Hill, Jane.....	TP 646	Holčapek, Michal	ThP 294	Horner, Gerhard.....	MP 071
Hill, Ryan	TP 633	Holden, Sylvia	WP 131	Horner, Julie	WP 531
Hill, Salisha	WP 462	Holding, Andrew N.....	ThP 536	Horner, Julie.....	ThP 025
Hill, Salisha	TP 566	Holguin, F. Omar.....	MOE am 10:10	Horner, Julie.....	WP 071
Hillenkamp, Franz	MP 007	Holl, Mark	ThP 212	Horner, Julie.....	ThP 050
Hiller, Luisa	WP 350	Holl, Mark	ThP 204	Horner, Julie.....	TP 247
Hilliard, Mark	MP 283	Holland, Patricia.....	WP 105	Horner, Julie.....	TOE pm 3:50
Hilmer, Jonathan K.	MOB pm 3:50	Holland, Patricia.....	TOG am 09:50	Horner, Julie A.	ThP 454
Hilser, Vincent	TP 503	Hollender, Julianne	MP 385	Horner, Julie A.	TP 460
Hiltner, Roger N.	ThP 338	Holley, Rebecca J.	MP 279	Horning, Stevan	WP 078
Hilvo, Mika	MP 676	Hollis, Steve	TP 211	Horning, Stevan R.	WP 082
Himmelsbach, Markus	MP 258	Holloway, John S.....	MP 109	Horning, Stevan R.	TP 706
Hinde, Katie	MP 277	Holman, Hoi-Ying	WP 453	Horning, Stevan R.	WP 090
Hindle, Ralph	TP 319	Holmes, Christopher	MP 650	Hornshaw, Martin	WP 287
Hines, Jesse	ThP 476	Holmes, Christopher	MP 648	Horrigan, Mark.....	TP 132
Hines, Kelly	TP 143	Holmes, Christopher	MP 651	Horynova, Milada	TP 509
Hinks, David.....	WP 212	Holmes, Christopher	MP 646	Hosaka, Kurando.....	TP 406
Hirano, Ichiro	MP 119	Holmes, Daniel T.....	WP 597	Hosaka, Kurando.....	WP 167
Hirano, Ichiro	MP 123	Holmes, Elaine.....	ThP 250	Hoskovec, Michal.....	MP 245
Hirano, Takashi.....	TP 182	Holmes, Elaine.....	ThP 428	Hossain, Mahmud.....	TP 673
Hiraoka, Kenzo	TP 061	Holmes, Elaine.....	ThP 197	Hoteling, Andrew J.....	TP 334
Hiraoka, Kenzo	TP 054	Holmes, Paula	ThP 047	Hou, Jirui	WP 344
Hiraoka, Kenzo	TP 064	Holsboer, Florian	ThOA pm 2:50	Hou, Junjie.....	WOA pm 3:50
Hiraoka, Kenzo	TP 062	Holt, Ginger E.	WP 437	Hou, Junjie.....	WP 621
Hirata, Akiyoshi	WP 575	Holtman, Garren	WP 175	Hou, Shu-jie	TP 520
Hiromasa, Yasuaki	WP 445	Holzmann, Johann	WP 702	Hou, Xiaowen	TP 454
Hirose, Kenji.....	TP 515	Hom, Brian	WP 331	Houde, Damian	MOB pm 3:10
Hisatomi, Hirotaka.....	MP 193	Homer-Vanniasinkam, Shervanthi	ThP 596	Houel, Stephane.....	MP 658
Hishiki, Takako	WP 439	Hong, Chi-Chen.....	WP 129	Houel, Stephane.....	MP 581
Hixson, Douglas	ThOF pm 3:50	Hong, Jangmi	ThP 154	Houel, Stephane.....	MP 450
Hixson, Kim K.	ThP 211	Hong, Jangmi	ThP 145	Houk, R. Sam	MP 631
Ho, Cheng-Mao.....	MP 549	Hong, Ji Won	ThP 342	Housley, Roberta.....	MP 424
Ho, David	ThP 461	Hong, Jiyong	MP 641	Housley, Roberta.....	MP 551
Ho, Emily	MP 325	Hong, Kwan Soo	ThP 682	Housman, Kathleen	MP 399
Ho, Emmie N. M.....	MP 157	Hong, Peng	ThP 396	Howder, Collin	ThOE pm 4:10
Ho, Jenny	ThOG pm 3:10	Hong, Peng	TP 381	Howe, Kevin	ThP 307
Ho, Tse-Tsung	ThP 118	Hong, Teresa	TP 518	Howe, Kevin	ThP 306
Ho, Yi-Chi	TP 264	Hong, Zhenning	ThP 666	Howell, Bonnie J.....	TP 524
Ho, Yen-Peng	WP 530	Honig, Vaclav	MP 550	Howell, Bonnie J.....	TP 648
Hobbs, Steve.....	ThP 094	Honnold, Ron	WP 331	Howes-Podoll, Maegen	ThP 522
Hobbs, Steve.....	ThP 095	Honnold, Ronald.....	WP 329	Hoyer, Barbara	TP 266
Hochrein, James	MP 066	Hood, Leroy	WP 505	Hoyer, James.....	WP 165
Hochstrasser, Denis.....	ThP 390	Hooff, Gero	MP 654	Hoyes, John B.....	TP 001
Hodge, Caleb	WP 332	Hoogland, Christine	ThP 390	Hoyes, John B.....	ThP 021
Hodges, Brittany	MP 435	Hoogsteden, Henk C.	MP 681	Hrudey, Steve E.	MP 383
Hoehne, Steven	ThP 205	Hook, Vivian	MOB pm 2:50	Hsiao, Cheng-Te.....	ThP 675
Hoenen, Herwart.....	TP 069	Hook, Vivian	WP 703	Hsiao, He-Hsuan	WP 627
Hoerning, Ole	MP 225	Hoopmann, Michael R.	MP 105	Hsieh, Edward J.	TOG pm 2:30
Hoevemeyer, Lori L.	WP 322	Hoopmann, Michael R.	MP 512	Hsieh, Hsin-Yu	WP 627
Hofele, Romina	MP 636	Hoopmann, Michael R.	ThP 386	Hsieh, Pei-Wen	ThP 330
Hoff, Edward	ThP 142	Hopf, Carsten	ThP 616	Hsieh, Yunsheng	TOF pm 4:10
Hoffman, Brian	ThP 136	Hopfgartner, Gerard	ThP 473	Hsu, Chang Samuel	ThP 352
Hoffman, Eric	TP 655	Hopfgartner, Gerard	MP 258	Hsu, Chang Samuel	ThP 342
Hoffman, Lars.....	ThP 074	Hopfgartner, Gerard	MOF am 08:30	Hsu, Chialin	MP 195
Hoffman, Lisabeth	TP 431	Hopfgartner, Gerard	TP 317	Hsu, Chuan-Chih	MP 485
Hoffman, Lisabeth	WP 475	Hopfgartner, Gérard	ThP 111	Hsu, Hong-Ming	ThP 515
Hoffman, Tim	ThP 358	Hopfgartner, Gérard	ThP 367	Hsu, Jing-Fang	WP 654
Hoffmann, Ralf.....	TP 007	Hopfgartner, Gérard	ThP 379	Hsu, Julie	ThP 450
Hoffmann, Ralf.....	TP 151	Hopkins, Derek F.....	ThP 088	Hsu, Pang-Hung	TP 395
Hoffmann, Ralf.....	WP 636	Hopkinson, Alan	WP 059	Hsu, Ping Yuan.....	MP 267
Hoffmann, William	WOC pm 2:50	Hopkinson, Alan	ThP 006	Hsu, Shan-Te.....	WP 219
Hoffmann, William	MP 008	Hopkinson, Alan C.	ThP 004	Hsu, Wan-Yu	TP 356
Hofman, Albert	TP 667	Hopkinson, Alan C.	ThP 017	Hsu, Wei	TP 264

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Hsu, Wen-Lian	TP 378	Huang, Yining	TP 501	Huo, Feifeng	ThP 129
Hsu, Yun-Wei A.	MP 476	Huang, Yiqun	WP 014	Hupp, Ted	TP 394
Hu, Chengqi	ThP 292	Huang, Yu	MP 281	Hupp, Ted	TP 559
Hu, Dingfei	MP 369	Huang, Yue	WOE am 08:30	Hur, Man Hoi	ThP 270
Hu, Fen Z.	WP 350	Huang, Yue	TP 055	Hurst, Glenn	MP 126
Hu, Han	TP 376	Huang, Yue	MP 250	Hurst, Greg	TP 640
Hu, Lianghai	MP 611	Huang, Yue	MP 203	Hurst, W. Jeffrey	WP 345
Hu, Lianghai	TP 533	Huang, Zejian	TP 405	Hurst, W. Jeffrey	WP 147
Hu, Mingyue	TP 254	Huart, Jean-Jacques	WP 517	Hurt, Matthew	TP 302
Hu, Peifeng	WP 391	Huart, Jean-Jacques	WP 640	Husi, Holger	ThP 681
Hu, Peifeng	TP 188	Hubalek, Martin	MP 209	Hutanu, Daniela	ThP 657
Hu, Peifeng	TP 117	Hubbard, Brian	TP 607	Hutchins, Patrick	MP 238
Hu, Qichi	MP 114	Hubbard, Brian	WP 665	Huttlin, Edward	TP 461
Hu, Rui	MP 545	Hubbard, Brian	ThP 533	Huttlin, Edward	MP 493
Hu, X. Tiger	ThP 311	Hubbard, Brian	TP 693	Huttlin, Edward L.	MP 440
Hu, Yan	TP 254	Hubler, Shane	MOA am 09:10	Huttlin, Edward L.	TP 703
Hu, Ye	MP 673	Hubler, Shane L.	TP 400	Hwa, Joyce	TP 694
Hu, Yunli	MP 286	Hucko, Simon	ThP 306	Hwang, Esther	WP 119
Hu, Yunli	WOD pm 4:10	Hucko, Simon	ThP 307	Hwang, Euijin	MP 359
Hu, Yunli	TP 174	Hudgens, Jeffrey W.	WP 063	Hyatt, Doug	TP 620
Hu, Zeping	WP 234	Hudson, Billy	WP 441	Hyland, K.	MP 340
Hua, David	ThP 586	Hudson, William	ThP 114	Hyötyläinen, Tuulia	MP 676
Hua, Qiao	MP 533	Hudson, William	ThP 116	Hyung, Seok-Won	ThP 211
Hua, Serenus	MP 694	Huettel, Markus	TOB pm 3:30	Hyung, Suk-Joon	ThOB am 08:30
Hua, Serenus	ThP 484	Huettenhain, Ruth	TOA pm 4:10	Hyung, Suk-Joon	WOB pm 3:30
Hua, Serenus	WOD am 08:50	Huffman, Brian	TP 010	Hyung, Suk-Joon	WOB am 09:10
Hua, Wenyi	ThP 163	Hufsky, Franziska	TOC am 08:30	Hyung, Suk-Joon	TOE am 09:50
Huadong, Sun	ThP 130	Hufsky, Franziska	TP 208	Iacovides, Demetris	MP 668
Huang, Bill	TP 586	Hufsky, Franziska	WP 366	Ibdah, Mwafaq	WP 426
Huang, Chengsi	TP 647	Hufsky, Franziska	MP 520	Ibrahim, Yehia	TP 141
Huang, Chengsi	WOE pm 3:30	Hughes, Beverly A.	TOC am 09:50	Ibrahim, Yehia	ThP 033
Huang, Fan	TP 014	Hughes, Chris	ThP 614	Ibrahim, Yehia	WOB am 08:30
Huang, Feilei	ThOF pm 3:50	Hughes, Chris	WP 589	Ichii, Shouko	MP 362
Huang, Fu-Lien	WP 106	Hughes, Chris	WP 473	Ichijo, Hidenori	MOB pm 4:10
Huang, Gang	WP 521	Hughes, Chris	TP 145	Ichikawa, Kazuhiro	TP 196
Huang, Guangming	ThOG pm 2:50	Hughes, Douglas	TP 452	Ichou, Farid	WP 125
Huang, Hai-Tsang	WP 614	Hughes, Jessica R.	ThP 276	Ida, Megumi	WP 215
Huang, Hao-Lun	ThP 100	Hughey, Christine A.	TP 010	Iden, Charles R.	TP 322
Huang, Jianfeng	TP 234	Huhman, David	ThP 258	Iedema, Martin	TP 422
Huang, Jincui	TP 506	Huhman, David V.	TOC am 09:30	Ifa, Demian R.	ThP 424
Huang, Jing-Yi	ThP 365	Huhmer, Andreas	WP 015	Igarashi, Yasuyuki	TP 536
Huang, Ju-Li	ThP 015	Huhmer, Andreas	ThOE am 08:30	Iglesias, Bernardo	TP 139
Huang, Junmin	MP 169	Huhmer, Andreas	WP 531	Iglesias, Jacobo	TOB am 09:50
Huang, Ke	ThP 321	Huhmer, Andreas	MP 106	Iglewski, Barbara	TP 558
Huang, Lan	ThP 527	Huhmer, Andreas F.R.	TP 460	Iida, Junko	MP 120
Huang, Lan	TOD am 09:50	Hui, Limei	MP 473	Iida, Junko	WP 171
Huang, Lin	MOA pm 3:50	Hui, Limei	MP 475	Iida, Junko	WP 384
Huang, Lin	TP 381	Hui, Renjie	WP 488	Iida, Takashi	MP 116
Huang, Mike-Qingtao	WP 667	Hulbert, David	WP 135	Iida, Takashi	MP 173
Huang, Mike-Qingtao	WP 253	Hulthe, Gustaf	MP 132	Iida, Takashi	MP 117
Huang, Min	MP 137	Humbel, Stéphane	TP 339	Iijima, Koichi	MP 491
Huang, Minzong	MP 034	Humbel, Stéphane	TP 338	Iijima-Ando, Kanae	MP 491
Huang, Richard Y-C.	TP 540	Hummel, Petra	ThOD pm 2:30	IJsselstijn, Linda	TP 667
Huang, Richard Yu-Cheng	TP 486	Humphreys, Griff	ThP 485	Ikeda, Fumiyo	MP 514
Huang, Richard Yu-Cheng	ThP 665	Humphreys, W. Griffith	ThP 689	Ikeda, Kazutaka	ThP 285
Huang, Rongrong	WOD pm 3:10	Humphreys, W. Griffith	TP 092	Ikeda, Tasuku	TOC am 08:50
Huang, Ruizhu	WP 567	Humphreys, William	MOF am 08:50	Ikegawa, Shigeo	MP 117
Huang, Su-Hui	WP 198	Humphreys, William	MOF pm 3:50	Ikegawa, Shigeo	MP 116
Huang, Tai-Chung	WP 693	Humphreys, William G.	TP 089	Ilchenko, Sergei	WP 561
Huang, Teng-Yi (Roy)	TP 545	Humphreys, William Griffith	MOF pm 3:30	Iliuk, Anton	WOA pm 2:30
Huang, To-Ju	ThP 405	Humphries, R. Keith	ThP 618	Iliuk, Anton	MP 480
Huang, Tom	WP 143	Humphreys, William Griffith	WP 092	Iliuk, Anton	TP 533
Huang, Wei-Cheng	ThP 559	Hung, Shi-Hua	ThP 041	Illes-Toth, Timea	ThP 670
Huang, Xian	TP 114	Hunley, Damound	WP 279	Impey, Gary	TP 222
Huang, Xin	ThP 692	Hunt, Donald	TP 427	Impey, Gary	MOF pm 3:30
Huang, Xin	ThP 396	Hunt, Donald	WP 476	in het Panhuis, Marc	MP 253
Huang, Xin	TP 710	Hunt, Donald F.	ThOA am 08:50	Indeykina, Maria	ThP 669
Huang, Xin	MOA pm 3:50	Hunter, Christie	MP 589	Indeykina, Maria I.	ThP 479
Huang, Xin	TP 381	Hunter, Christie	WP 606	Inerowicz, Halina D.	MP 668
Huang, Yande	MP 140	Hunter, Christie	ThP 462	Ingalls, Stephen T.	MP 349
Huang, Yingying	MOF am 09:10	Hunter, Christie	MP 204	Ingham, Patrick	MP 650
Huang, Yingying	TP 247	Hunter, Christie L.	MP 598	Ingham, Patrick	MP 646
Huang, Yingying	ThP 194	Hunter, Christie L.	TP 681	Ingham, Patrick	MP 648
Huang, Yingying	TOB am 08:50	Hunter, Christie L.	ThP 694	Ingham, Patrick	MP 651
Huang, Yingying	ThP 251	Hunter, Kevin	ThP 034	Ingrell, Christian Ravensborg	TP 399
Huang, Yingying	MOF pm 3:50	Hunter, Kevin	ThP 057	Inohana, Yusuke	MP 119
Huang, Yingying	ThP 198	Hunter, Larry	TP 323	Inohana, Yusuke	MP 123

INDEX OF AUTHORS

Inutan, Ellen.....	MP 014	Jackson, Richard F.W.	ThP 002	Jasani, Bharat.....	WP 164
Inutan, Ellen D.	MP 009	Jackson, Shelley N.....	ThP 272	Jasieczek Mastromatteo, Christina.....	WP 111
Inutan, Ellen D.	MP 016	Jackson, Shelley N.....	WP 431	Jasieczek Mastromatteo, Christina.....	ThP 178
Inutan, Ellen D.	MP 597	Jackson, Shelley N.....	TP 140	Jaskolla, Thorsten Wolfgang.....	MP 007
Inutan, Ellen D.	ThP 346	Jackson, Shelley N.....	ThP 427	Jault, Jean-Michel.....	TP 572
Inutan, Ellen D.	MP 064	Jackson, Shelley N.....	WP 333	Javaheri, Hassan.....	MP 052
Ioanoviciu, Alexandra	ThP 459	Jackson, Warren.....	TP 341	Javahery, Gholamreza.....	TP 058
Iqbal, Tahera.....	ThP 209	Jacob, Cristina C.	TP 320	Javahery, Gholamreza.....	MP 401
Irie, Miho.....	ThP 242	Jacobs, Jon.....	TP 141	Jayaratra, Hasanthan.....	ThP 113
Irikura, Karl.....	WP 053	Jacobs, Jon M.....	ThP 647	Jayasundera, Keerthi.....	MP 480
Isaac, Issa.....	WP 652	Jacobs, Peter L.....	MOF pm 3:10	Jayasundera, Keerthi.....	WOA pm 2:30
Isaac Mezengie, Giorgis.....	ThP 288	Jacquilleot, Sandrine.....	WP 094	Jean, Nicolas.....	TP 273
Isailovic, Dragan.....	ThP 474	Jaeger, Janina.....	TP 409	Jean, Nicolas.....	TP 255
Isailovic, Dragan.....	ThP 143	Jagadish, Teena.....	TP 601	Jebanathirajah Steen, Judith.....	ThP 544
Isailovic, Dragan.....	ThP 419	Jagerdeo, Eshwar.....	WP 211	Jebanathirajah Steen, Judith.....	TP 624
Isbell, Katie.....	TP 059	Jagerdeo, Eshwar.....	ThP 381	Jedrychowski, Mark.....	MP 440
Isenberg, Samantha.....	MP 054	Jagtap, Pratik.....	TP 379	Jedrychowski, Mark.....	MP 493
Isenberg, Samantha L.....	MP 053	Jagtap, Pratik.....	MP 448	Jedrychowski, Mark P.....	TP 703
Ishihama, Yasushi.....	TP 536	Jagtap, Pratik.....	TP 398	Jehmlich, Nico.....	ThP 602
Ishihara, Morio.....	ThP 062	Jagus, Utz-Peter.....	ThP 210	Jelinek, Christine.....	TP 690
Ishihara, Morio.....	ThP 067	Jahn, Olaf.....	MP 218	Jelinek, Christine A.....	WP 520
Ishii, Keisuke.....	ThP 218	Jahn, Sandra.....	WOG pm 2:50	Jemal, Mohammed.....	MOF am 08:50
Ishikawa, Chihito.....	MP 655	Jahn, Sandra.....	WOG pm 3:50	Jemal, Mohammed.....	MP 139
Ishizaki, Itsuko.....	ThP 442	Jahouh, Farid.....	TP 520	Jen, Connie.....	ThP 233
Islam Williams, Taufika.....	TP 613	Jain, Shashank.....	MP 029	Jeng, Jingyueh.....	TP 310
Ismail, Mohd Nazri.....	MP 278	Jairaj, Mark.....	ThP 635	Jeng, Jingyueh.....	MP 324
Isobe, Toshiaki.....	WP 180	Jakob, Ursula.....	MP 605	Jeng, Kevin.....	MP 552
Isobe, Toshiaki.....	WP 179	Jakobsson, Per-Johan.....	TP 659	Jenkins, JJ.....	ThP 219
Isserlin, Ruth.....	WP 508	Jakubowski, Jr., E. Michael.....	TP 308	Jenkins, Rand.....	MOG am 08:50
Ito, Seiji.....	WP 167	Jakubowski, Jr., E. Michael.....	TP 307	Jenkins, Rand.....	MOG pm 4:10
Itoh, Yoshiyuki.....	TP 345	Jalovy, Zdenek.....	WP 061	Jenkins, Stefan.....	TP 202
Itoh, Yoshiyuki.....	MP 240	James, Andrew.....	MP 202	Jenkins, Tim.....	MP 032
Itoh, Yoshiyuki.....	TP 346	James, Christopher.....	TP 281	Jenna, Sarah.....	ThP 252
Itoh, Yoshiyuki.....	ThP 333	James, Christopher.....	MP 141	Jenna, Sarah.....	WP 299
Itoi, Hiroto.....	ThP 082	James, Christopher.....	WP 143	Jenner, Matthew.....	ThP 559
Itose, Satoru.....	ThP 062	James, Jon.....	TOG pm 3:10	Jennings, Michael.....	ThP 465
Iurascu, Marius-Ionut.....	TOF am 08:30	James, Keith.....	MP 394	Jennings II, Mark E.....	MP 229
Ivanov, Alexander R.....	Special 002	James, Laura.....	WP 664	Jensen, Kirk.....	ThP 348
Ivanov, Alexander R.....	MP 576	James, Margaret O.....	WP 113	Jensen, Ole N.....	MP 600
Iverson, Brent.....	WP 175	Jami, Saied.....	TP 710	Jensen, Pamela.....	ThP 301
Ives, Sian.....	WP 109	Jamin, Emilien.....	MP 420	Jenuwein, Thomas.....	WP 185
Ivey, Richard.....	WP 390	Jana, Sadhan C.....	TOE am 08:50	Jeon, Junho.....	MP 050
Ivosev, Gordana.....	WP 306	Janakiraman, Vijay.....	TP 632	Jeon, Ock-Youn.....	ThOD am 09:30
Ivosev, Gordana.....	MP 051	Janecki, Dariusz.....	WP 631	Jeong, DongSik.....	TP 358
Ivosev, Gordana.....	MP 436	Janecki, Dariusz.....	MP 201	Jeong, DongSik.....	TP 359
Iwabuchi, Haruo.....	TP 215	Janfelt, Christian.....	WP 427	Jeong, Ji-Eun.....	ThP 342
Iwama, Takashi.....	TP 054	Jang, Haejong.....	MP 160	Jeong, Kyowon.....	MP 458
Iwamoto, Shinichi.....	ThP 583	Jang, InJin.....	WP 264	Jeong, Yeongran.....	ThP 489
Iwamoto, Shinichi.....	ThP 629	Jang, In-Jin.....	WP 246	Jeong, Youngdo.....	ThP 146
Iwamoto, Shinichi.....	ThP 582	Jang, In-Jin.....	WP 244	Jertz, Roland.....	MP 104
Iwamoto, Takeo.....	WP 445	Jang, In-Jin.....	WP 247	Jertz, Roland.....	WOE pm 4:10
Iwasaki, Noriyuki.....	WP 226	Jang, In-Jin.....	WP 245	Jerums, Matt.....	WP 521
Iwata, Hideyuki.....	ThP 084	Janiszewski, John.....	ThP 191	Jeschke, Peter.....	TP 069
Iyer, Ramaswamy.....	TP 092	Janiszewski, John.....	WOF am 08:50	Jetter, Reinhard.....	WP 408
Iyer, Rashi.....	TP 325	Janiszewski, John.....	ThP 213	Jewett, Ivan.....	TP 047
Iyer, Srinivas.....	TP 325	Jankiewicz, Bartłomiej.....	WP 022	Jez, Joseph M.....	TP 639
Izrael-Tomasevic, Anita.....	ThP 501	Jansson, Anna.....	MOB pm 3:30	Jhang, Siou-sian.....	TP 036
Izumi, Shunsuke.....	WP 496	Janoske, Uwe.....	TP 071	Jhang, Siou-Sian.....	ThP 103
Izumi, Takashi.....	TP 215	Janson, Naomi.....	MP 354	Ji, Cheng.....	WP 666
Jabbour, Rabih.....	ThOC pm 4:10	Janssen, Gary.....	ThOE pm 3:30	Ji, Chengjie.....	WP 663
Jabs, Wolfgang.....	ThP 646	Janssen, Giselle.....	TP 715	Ji, Eun Sun.....	TP 672
Jack, Rhona.....	MP 345	Janssen, Hans-Gerd.....	TP 344	Ji, Eun Sun.....	ThP 628
Jackson, Angela.....	TP 689	Janssen, Janet.....	ThOC pm 3:50	Ji, Qin.....	ThP 639
Jackson, Angela.....	TP 688	Janssen, Janet.....	TP 621	Ji, Qin.....	TOF am 09:10
Jackson, Angela M.....	MP 633	Janto, Benjamin.....	WP 350	Ji, Weihu.....	WP 511
Jackson, Angela M.....	ThP 587	Jap, Bing K.....	TP 570	Ji, Yongjie.....	MP 287
Jackson, Angela M.....	WP 642	Jarak, Ivana.....	TP 172	Ji, Yuhuan.....	ThP 495
Jackson, Angela M.....	TOA am 10:10	Jariwala, Freneil.....	WP 017	Jia, Chenxi.....	MP 475
Jackson, Ayanna.....	TOB am 08:50	Jarrell, Ken.....	MP 538	Jia, Weitao.....	TP 532
Jackson, Ayanna U.....	MP 125	Jarrold, Martin.....	ThP 079	Jia, Yan.....	WP 520
Jackson, Glen.....	WP 007	Jarvis, Jacqueline M.....	ThP 338	Jia, Yan.....	TP 690
Jackson, Glen.....	WP 040	Jarvis, Michael.....	MP 356	Jian, Wenying.....	ThP 214
Jackson, Glen.....	WP 213	Jarvis, Michael J. Y.....	TP 135	Jiang, Dan.....	ThP 457
Jackson, Glen P.....	ThP 075	Jarvis, Michael J. Y.....	ThP 092	Jiang, Gong-Yu.....	ThP 455
Jackson, Jonathan.....	ThP 468	Jarvis, Michael J. Y.....	WP 214	Jiang, Hai.....	ThP 048
Jackson, Lewis C.....	WP 148	Jarvis, Michael J. Y.....	WP 084	Jiang, Hao.....	WP 241
Jackson, Peter.....	ThP 209	Jasak, Julia.....	WP 327	Jiang, Hongliang.....	MP 152

INDEX OF AUTHORS

Jiang, Jin	TOB am 10:10	Jones, Elliott.....	MOF am 10:10	Junga, Heiko.....	WP 286
Jiang, Lu.....	MOD pm 3:50	Jones, Elliott.....	WOG pm 3:30	Jungblut, Benno.....	MP 509
Jiang, Wen.....	MP 223	Jones, Elliott.....	WP 268	Junnotula, Venkatraman.....	WP 239
Jiang, Xiaosheng.....	ThP 690	Jones, Emrys.....	ThP 444	Junot, Christophe.....	ThOG am 09:50
Jiang, Xiaosheng.....	ThOF pm 3:10	Jones, Emrys A.....	WP 436	Junot, Christophe.....	ThP 222
Jiang, Xiaoyue.....	MP 475	Jones, Enrys.....	TP 413	Junot, Christophe.....	WP 125
Jiang, Xiaoyue.....	MP 471	Jones, Gareth Rhys.....	TP 130	Juo, Chiun-Gung.....	WP 300
Jiang, Xinnong.....	WP 395	Jones, Gavin.....	ThP 121	Jurneczko, Ewa.....	WOB pm 4:10
Jiang, Xinzhaoh.....	WP 521	Jones, Gavin.....	ThP 122	Just, Collin.....	MP 369
Jiang, Xuntian.....	MP 138	Jones, John.....	TP 172	Kaake, Robyn.....	ThP 527
Jiang, You.....	TP 405	Jones, Lisa M.....	MP 638	Kabe, Yasuaki.....	ThP 562
Jiang, Zheng.....	TP 370	Jones, Matthew.....	MP 691	Kacerovsky, Marian.....	WP 606
Jiang, Zibin.....	WP 099	Jones, Michael.....	MP 196	Kachman, Maureen.....	ThP 221
Jiao, Lili.....	TP 038	Jones, Patrick R.....	TP 041	Kachman, Maureen.....	TOC am 10:10
Jie, Yan.....	TP 497	Jones, Patrick R.....	WP 186	Kachman, Maureen.....	MP 314
Jin, Feng.....	ThP 075	Jones, Patrick R.....	WP 115	Kaczan, C. M.....	ThP 003
Jin, Jian.....	WP 608	Jones, Patrick R.....	WP 114	Kaddurah-Daouk, Rima.....	ThOA pm 3:10
Jin, Jonghwa.....	ThP 589	Jones, Rhys.....	ThP 122	Kadi, Adnan.....	WP 271
Jin, Mengyao.....	WP 243	Jones, Rhys.....	ThP 121	Kadi, Adnan.....	TP 045
Jin, Youxun.....	ThP 535	Jones, Richard.....	WP 610	Kadiyala, Chandra Sekhar Rao.....	TP 435
Jin, Zhicheng.....	MP 031	Jones, William J.....	TP 599	Kadkhodayan, Miryam.....	TP 715
Jin, Zhicheng.....	WP 022	Jonscher, Karen.....	WP 603	Kafle, Amol.....	ThP 376
Jin, Zhicheng.....	WP 191	Joo, Won-A.....	WP 639	Kaftan, Filip.....	ThP 418
Jing, Li.....	WOA am 08:30	Joore, Jos.....	TP 595	Kailasam, Srividya.....	MP 181
Jing, Li.....	TP 555	Jorabchi, Kaveh.....	TP 031	Kailemia, Muchena J.....	TP 184
Jinmei, Hiroshi.....	TP 165	Jorabchi, Kaveh.....	TP 074	Kaiser, Nathan.....	ThP 354
Jinwen, Chen.....	ThP 374	Jordaan, Justin.....	MP 479	Kaiser, Nathan.....	MP 086
Jirui, Hou.....	ThOG am 08:50	Jordan, Alfons.....	ThP 049	Kaiser, Nathan.....	MP 558
Jmeian, Yazan.....	MP 201	Jordan, Peter.....	ThP 011	Kaiser, Nathan.....	MP 088
Jo, Cheon-Ho.....	MP 070	Jordan, Steve.....	ThP 122	Kaiser, Nathan.....	MP 087
Jockusch, Rebecca A.....	MOC pm 3:30	Jordan, Thomas.....	TP 580	Kaiser, Nathan K.....	MOE am 09:10
Johansen, Eric.....	MP 589	Jore, Mattijas M.....	TP 156	Kajihara, Shigeki.....	ThP 629
Johansen, Eric.....	MP 668	Jørgensen, Thomas.....	WP 571	Kajihara, Shigeki.....	ThP 582
Johansson, Monika.....	WP 314	Jorgenson, James.....	MP 232	Kajihara, Shigeki.....	TP 406
Johns, Douglas.....	WP 665	Jorgenson, James.....	MP 593	Kajihara, Shigeki.....	MP 445
Johns, Douglas.....	TP 693	Jorgenson, James.....	TP 583	Kajihara, Shigeki.....	ThP 383
Johns, Douglas.....	ThP 533	Jorsback, Anneli.....	ThP 623	Kalafatis, Nicolette.....	ThP 284
Johnson, Alison E.....	WP 670	Joseph, Siji.....	TP 699	Kalanetra, Karen.....	MP 276
Johnson, Amy J.....	WP 595	Joseph, Siji.....	TP 201	Kalb, Suzanne.....	MP 392
Johnson, Casey.....	TP 238	Josephs, Jonathan.....	WP 071	Kalb, Suzanne.....	MP 391
Johnson, Darryl.....	MP 226	Josephs, Jonathan L.....	TP 089	Kalcic, Christine L.....	WP 026
Johnson, Darryl.....	MP 220	Josephs, Jonathan L.....	MOF pm 3:50	Kale, Dipali.....	MP 333
Johnson, E. Adair.....	ThP 345	Josephs, Jonathan L.....	MOF am 09:30	Kalkhof, Stefan.....	WP 628
Johnson, Elizabeth.....	WP 435	Josephs, Jonathan L.....	MOF pm 3:30	Kalkum, Markus.....	TP 518
Johnson, Grant.....	WOC pm 3:10	Josic, Djuro.....	ThOF pm 3:50	Käll, Lukas.....	WP 368
Johnson, Jennifer.....	MP 178	Jouanin, Isabelle.....	WP 072	Kallback, Patrik.....	WP 410
Johnson, Kenneth L.....	TP 650	Jourdan, Emmanuel.....	MOD pm 2:50	Kallback, Patrik.....	TP 404
Johnson, Kevin J.....	MP 360	Joviliano, Renan.....	ThOB pm 2:30	Kalli, Anastasia.....	WP 087
Johnson, Mark.....	MOC pm 4:10	Juang, Shin-Hun.....	MP 492	Kalli, Anastasia.....	MP 455
Johnson, Mark.....	ThP 011	Judkins, Timothy.....	TP 022	Kallish, Staci.....	WP 689
Johnson, Michelle.....	ThP 673	Juerschik, Simone.....	ThP 049	Kalmeyer, Vadim.....	MP 404
Johnson, Richard S.....	TP 149	Jukes-Jones, Rebekah.....	ThP 590	Kaltashov, Igor A.....	TP 123
Johnson, Robert W.....	WOF am 09:50	Julian, Bernard.....	WP 079	Kaltashov, Igor A.....	WP 547
Johnson, Robert W.....	WP 262	Julian, Bernard.....	WOF am 10:10	Kaltashov, Igor A.....	ThP 664
Johnston, Stephen.....	MP 191	Julian, Bruce A.....	TP 509	Kaltashov, Igor A.....	ThP 643
Jolliffe, Charles.....	TP 060	Julian, Ryan R.....	WOG pm 3:10	Kaltashov, Igor A.....	WP 563
Joly, Laure.....	ThOD pm 4:10	Julian, Ryan R.....	WP 483	Kaltashov, Igor A.....	WOG am 08:50
Jonathan, Karty.....	MP 262	Julian, Ryan R.....	MOC am 10:10	Kaltashov, Igor A.....	TP 104
Jones, A. Daniel.....	MP 230	Julian, Ryan R.....	ThP 450	Kaltenbrun, Erin.....	MP 619
Jones, A. Daniel.....	ThP 230	Julian, Ryan R.....	ThP 553	Kalyanaraman, Ananth.....	MP 463
Jones, A. Daniel.....	TP 192	Jumper, Chanelle C.....	MP 639	Kalyuzhnaya, Marina.....	MP 332
Jones, A. Daniel.....	TP 191	Jun, Ji Hyun.....	ThP 420	Kamel, Amin M.....	TP 230
Jones, A. Daniel.....	WP 230	Jun, Ji Hyun.....	WP 425	Kamel, Amin M.....	TP 229
Jones, A. Daniel.....	ThOG am 10:10	Jun, Jin Hyun.....	WP 630	Kamiguchi, Hidenori.....	MP 314
Jones, A. Daniel.....	MP 320	Jun, Hyun-Jin.....	TP 672	Kamiguchi, Hidenori.....	TOC am 10:10
Jones, Alun.....	ThP 331	Jung, Jinwoo.....	WP 255	Kamleh, Mhmd Anas.....	ThP 245
Jones, Andrew.....	WP 491	Jung, Joohee.....	WP 255	Kamrath, Michael.....	ThP 011
Jones, Barry R.....	MOG pm 2:30	Jung, Kwanyoung.....	MP 668	Kamrath, Michael.....	MOC pm 4:10
Jones, Barry R.....	MP 664	Jung, Kwanyoung.....	ThP 567	Kan, Alison.....	MP 288
Jones, Barry R.....	WP 690	Jung, Kwanyoung.....	TP 521	Kan, Steve.....	MP 309
Jones, Bryan.....	ThOF am 08:30	Jung, Moon Chul.....	WP 557	Kanamori-Kataoka, Mieko.....	WP 647
Jones, Chad.....	TOE am 08:30	Jung, Stephan.....	MP 502	Kanazawa, Mitsuihiro.....	WP 384
Jones, Christina.....	TP 039	Jung, Sung Yun.....	MOA am 08:50	Kanda, Tomomasa.....	WP 215
Jones, Christopher.....	TP 188	Jung, Sunhee.....	MP 522	Kandasamy, Kumaran.....	TP 383
Jones, Dean.....	TP 095	Jung, Young Rim.....	MP 177	Kandel, Eric R.....	ThP 683
Jones, Elliott.....	MOF pm 3:30	Jung, Young Rim.....	MP 176	Kandur, Wynne.....	TOD am 09:50
Jones, Elliott.....	WP 088	Junga, Heiko.....	WP 272	Kaneko, Sachiyo.....	MP 362

INDEX OF AUTHORS

Kaneko, Yuka	TP 692	Katakura, Masanori	TOC pm 4:10	Kelly, John F.	MP 538
Kang, Hee-Gyoo	WP 630	Katakura, Masanori	TP 586	Kelly, Ryan T.	WOE am 08:50
Kang, Ju Hee	WP 127	Katayama, Hiroyuki	TP 674	Kelstrup, Christian	MP 494
Kang, Liping	WP 108	Katayama, Hiroyuki	TP 589	Kempe, Guenther	WP 321
Kang, Min-Jung	MP 504	Katchman, Ben	TP 683	Kempf, Jürgen	TP 318
Kang, Sebyung	WP 537	Kathy, Lewis	MP 317	Kenar, Erhan	ThP 410
Kang, Seungwoo	MP 160	Kato, Shuji	ThOB am 08:50	Kendrick, Agnieszka	WP 603
Kang, Un-Beom	ThP 687	Katoh, Hajime	ThP 268	Kennedy, Jacob	ThP 684
Kang, Yang	WOA am 09:50	Katsuki, Kousuke	ThP 067	Kennedy, Jacob	WP 390
Kang, Young-Woon	MP 070	Katta, Viswanatham	ThP 142	Kennedy, Jacob	WP 507
Kanngiesser, Sebastian	WOE pm 2:30	Kattner, Gerhard	ThP 360	Kennedy, Jacob	MP 679
Kanobana, Kirezi	MP 444	Katze, Michael	TP 141	Kennedy, Jacob	MP 656
Kanter, Evelyn M.	TP 540	Katze, Michael	TP 630	Kennedy, Joseph	TP 333
Kanwar, Namita	TP 718	Katze, Michael G.	ThP 647	Kennedy, Joseph H.	MP 030
Kao, Athit	TOD am 09:50	Katze, Michael G.	ThP 255	Kennedy, Joseph H.	ThP 302
Kao, Yi-Ting	WP 300	Kautzenmeyer, Bryan	MP 170	Kennedy, Joseph H.	WP 308
Kapellios, Efthymios	WP 540	Kautzenmeyer, Bryan	ThOF am 10:10	Kennedy, Joseph H.	WP 419
Kaper, James B.	TP 617	Kauffman, Stephen	WP 531	Kenneth, Swanson	WP 165
Kapinos, Brendon	WP 276	Kaur, Parminder	ThP 679	Kenney, Linda	TP 497
Kaplan, Desmond	TP 184	Kaur, Prabhjit	WP 392	Kenny, Diarmuid	TP 178
Kaplan, Desmond	WP 004	Kaur, Surinder	ThP 658	Kenttamaa, Hilikka	WP 191
Kaplan, Desmond	MP 054	Kaur-Atwal, Gushinder	ThP 593	Kenttamaa, Hilikka	MP 031
Kaplan, Desmond	ThP 085	Kaur-Atwal, Gushinder	ThP 590	Kenttamaa, Hilikka	WP 021
Kaplan, Desmond	MP 063	Kautz, Roger	TP 233	Kenttamaa, Hilikka	WP 022
Kaplan, Desmond	MP 055	Kawahara, Kazuki	ThP 534	Kenttamaa, Hilikka	TP 289
Kaplan, Kimberly	ThP 377	Kawahara, Yukiko	WP 323	Kenttamaa, Hilikka I.	ThOB pm 3:10
Kaplowitz, Neil	WP 666	Kawahara, Yukiko	WP 310	Keppel, Theodore	TP 495
Kapron, Jim	WP 138	Kawahata, Noriyuki	TP 502	Kerjaschki, Dentscho	ThP 435
Kapur, Arvinder	ThP 680	Kawahata, Noriyuki	WP 545	Kern, John	WP 679
Karagul, Hilal	ThP 685	Kawai, Mikako	WP 402	Kern, Timothy	TP 435
Karam, Hani	MP 398	Kawakami, Nobuhiko	TP 153	Kerner, Janos	TP 581
Karamanlou, Spyridoula	WP 540	Kawasaki, Hideya	MP 618	Kersten, Hendrik	MP 002
Karamanlou, Spyridoula	WP 069	Kawasaki, Hideya	MP 193	Kersten, Hendrik	MP 005
Karas, Michael	MP 124	Kawasaki, Hiroshi	ThP 442	Kersten, Hendrik	MP 006
Karas, Michael	ThP 153	Kay, Phyla	ThP 492	Kersten, Hendrik	TP 071
Karas, Michael	TP 578	Kazuki, Yasuhiro	WP 266	Kersten, Hendrik	MP 020
Karas, Michael	TP 361	Ke, Jing	ThP 115	Kersten, Hendrik	MP 017
Karas, Michael	ThP 578	Ke, Jing	WP 667	Kersten, Roland D.	MP 500
Karas, Michael	MP 007	Ke, Jing	WP 254	Kertesz, Vilmos	ThOG pm 4:10
Karellas, Nicholas	MP 024	Ke, Zhenlian	TP 648	Kertesz, Vilmos	MP 037
Karger, Barry	WOD am 10:10	Kealin, Martin	MP 690	Kertesz, Vilmos	TP 408
Karger, Barry L.	TP 708	Keasling, Jay D.	TP 717	Keshishian, Hasmik	WP 507
Karger, Barry L.	WP 569	Keen, Denise	MP 427	Keshishian, Hasmik	WP 523
Karger, Barry L.	ThP 597	Keener, Nick	WP 521	Keshishian, Hasmik	ThP 471
Karger, Barry L.	MP 283	Kehasse, Amanuel	MP 484	Keshishian, Hasmik	TOA am 10:10
Karger, Barry L.	TP 697	Kehoe, David	MP 556	Keshishian, Hasmik	MP 598
Karger, Barry L.	ThP 478	Keidel, Eva-Maria	MP 529	Kessler, Barbara	MP 407
Karim, Muhammed	TP 562	Kekow, Joern	WP 596	Kessler, Benedikt	MP 517
Karim, Sumera	TP 425	Kelher, Marguerite	WP 637	Kessler, Benedikt	ThOG am 09:30
Karlsson, Anna	WP 430	Kelkar, Dhanashree	TP 638	Kesuma, Djohan	TP 081
Karlsson, Anna	MOD pm 3:30	Kelleher, Kerry	TP 110	Kettenbach, Arminja	ThP 633
Karlsson, Niclas	TP 178	Kelleher, Neil L.	MP 595	Kettenbach, Arminja	TP 542
Karlsson, Niclas	ThP 564	Kelleher, Neil L.	ThP 605	Kettenbach, Arminja	MOA am 09:30
Karoly, Edward	WP 236	Kelleher, Neil L.	TP 553	Kevala, Karl	TOC pm 4:10
Karp, Russell	ThP 185	Kelleher, Neil L.	WOA am 10:10	Kevala, Karl R.	MP 266
Karr, Jessica	WP 455	Kelleher, Neil L.	WP 090	Khadang, Ardeshir	ThP 108
Karr, Timothy	TP 701	Kelleher, Neil L.	ThOD am 09:10	Khainovski, Nikita	WP 608
Karras, Robin	WP 166	Kelleher, Neil L.	TP 560	Khairallah, George N.	ThOB pm 3:30
Karst, Uwe	TP 212	Keller, Andrew	ThP 386	Khairallah, George N.	ThOB am 09:30
Karst, Uwe	WOG pm 2:50	Keller, Jennifer	MP 163	Khairallah, George N.	WP 065
Karst, Uwe	TP 214	Keller, Jennifer	ThP 176	Khalaf, Fouad	TP 297
Karst, Uwe	TP 213	Kellersberger, Katherine A.	WP 418	Khalaf, Fouad	ThP 358
Karst, Uwe	TP 239	Kellersberger, Katherine A.	ThP 422	Khan, Ikhlal	ThP 224
Karst, Uwe	WOG pm 3:50	Kelley, James A.	WP 118	Khan, Ikhlal	WP 359
Karty, Jonathan	ThP 266	Kelley, James A.	MP 512	Khan, M. Akram	WP 427
Karty, Jonathan A.	MP 556	Kelley, Lauren	TP 614	Khandelwal, Purnima	TP 102
Kasama, Takeshi	WP 575	Kellie, John F.	MP 595	Khandurina, Julia	MP 025
Kass, Ignatius	TP 243	Kellie, John F.	TP 560	Kharchenko, Andriy	ThP 077
Kassam, Karim	WOF pm 4:10	Kellis, Manolis	WP 628	Kharchenko, Andriy	MP 094
Kassan, Scott	ThP 064	Kellmann, Markus	WOE pm 2:30	Kharlamova, Anastasia	ThP 541
Kast, Elisabeth	TP 162	Kellmann, Markus	WP 078	Kharlamova, Anastasia	ThP 557
Kast, Juergen	ThP 448	Kellmann, Markus	MP 103	Kharybin, Oleg	ThP 479
Kast, Juergen	WP 456	Kellmann, Markus	MOF am 09:10	Khatun, Jainab	MP 205
Kast, Juergen	WP 385	Kellmann, Markus	MP 453	Khera, Smriti	TP 211
Kast, Jürgen	WP 577	Kellmann, Markus	ThOE am 08:30	Kheterpal, Indu	TP 614
Kasumov, Takhar	WP 561	Kellmann, Markus	MP 106	Khoo, Kay-Hooi	WOD am 09:50
Katagi, Munehiro	WP 171	Kellum, John A.	WP 641	Khoo, Kay-Hooi	ThP 632

INDEX OF AUTHORS

Khosla, Chaitan.....	ThP 494	Kim, Mikyung	WP 559	Kirchner, Marc	TOA am 08:30
Kibelka, Gottfried	ThP 064	Kim, Min Kyung.....	ThP 169	Kirk, Benjamin B	ThOB pm 2:50
Kidwai, Afshan	WP 220	Kim, Min-Sik.....	TP 638	Kirkland, Jack	MP 220
Kiehne, Andrea	ThP 585	Kim, Min-Sik.....	TP 383	Kirkpatrick, Donald S.	ThP 501
Kieltyka, Katarzyna	ThP 186	Kim, Min-Sik.....	WP 634	Kirkwood, Jay	ThP 229
Kieser, William E.	MP 401	Kim, Min-Sik.....	ThP 521	Kirpekar, Finn	MP 302
Kiffe, Michael.....	TP 220	Kim, Min-Sun.....	WP 248	Kis, Mihály	TP 396
Kil, Yong	MP 461	Kim, Min-sun	TP 113	Kiselar, Janna	MP 642
Kil, Yong J.	MP 447	Kim, Min-Sun.....	MP 156	Kiselar, Janna	MP 098
Kilgore, Jacob.....	WP 036	Kim, Min-sun	WP 353	Kiser, Patrick	WP 414
Killcoyne, Sarah	TP 401	Kim, Moo-Young.....	WP 242	Kishimoto, Taro.....	TP 629
Killeen, Kevin	MP 231	Kim, Moo-Young.....	TP 279	Kiss, Andras	WP 446
Killeen, Kevin	TOG pm 3:10	Kim, Moo-Young.....	ThP 183	Kiss, Andras	ThP 426
Killeen, Kevin	TP 183	Kim, Myung Soo.....	ThP 449	Kiss, Andras	WP 433
Killeen, Kevin	ThP 571	Kim, Sang Goo.....	ThP 682	Kita, Adriana Z.....	TP 104
Killeen, Kevin	TP 129	Kim, Sanggoo	WP 255	Kitagawa, Norton	MP 231
Killeen, Kevin	MOB am 08:30	Kim, Sang-Hyun.....	TP 309	Kitagawa, Norton	MP 426
Killins, Renee.....	WOA pm 2:30	Kim, Sangtae.....	ThP 405	Kitagawa, Norton	WP 505
Kilpatrick, Eric	TP 677	Kim, Sangtae.....	ThOA am 09:30	Kitov, Pavel	WP 550
Kilpatrick, Lisa	TP 677	Kim, Sangtae.....	MP 467	Kitova, Elena	WP 055
Kilpatrick, Lisa E.	WP 493	Kim, Seong	WP 362	Kitova, Elena	WP 550
Kilpatrick, Lisa E.	ThOA am 09:50	Kim, Seoung Il.....	TP 577	Kitova, Elena	WP 551
Kim, Bora	WP 630	Kim, Soo Young	ThP 682	Kitova, Elena	WP 054
Kim, Chae-kyu.....	ThP 146	Kim, Sook-Kyung	ThP 535	Kittlaus, Stefan	WP 321
Kim, Cheol Woo	WP 127	Kim, Sun Hwa	WP 247	Kiuchi, Masato	MP 362
Kim, CheongTae.....	TP 358	Kim, Sun Jong	WP 630	Kiyonami, Reiko	ThP 050
Kim, CheongTae.....	TP 359	Kim, Sung Hong.....	ThP 342	Kiyonami, Reiko	TP 680
Kim, DaeHyun	TP 358	Kim, Sunghwan.....	ThP 342	Kjellén, Lena	MP 279
Kim, DaeHyun	TP 359	Kim, Sunghwan.....	TP 017	Klaene, Joshua.....	TP 312
Kim, Ekwon.....	TP 531	Kim, Sunghwan.....	ThP 270	Klapoetke, Song	TP 514
Kim, Ekwon.....	ThP 589	Kim, Tim	MP 348	Klareskog, Lars	TP 659
Kim, Evelyn H.....	TP 588	Kim, Unyong.....	ThP 168	Klarskov, Klaus	ThP 492
Kim, Evelyn H.....	TP 523	Kim, Unyong.....	ThP 170	Klassen, John	WP 551
Kim, Grace E.	ThP 172	Kim, Woong	WP 613	Klassen, John	WP 054
Kim, Hee-Yong.....	TP 586	Kim, Woong	MP 440	Klassen, John	WP 055
Kim, Hee-Yong.....	TOC pm 4:10	Kim, Yangsun	ThP 140	Klassen, John	WP 550
Kim, Hee-Yong.....	MP 266	Kim, Yangsun	ThP 415	Klaenberg, Kathryn	WP 203
Kim, Helen	ThP 228	Kim, Yeoun Jin.....	ThOE am 08:30	Klee, Sonja	MP 002
Kim, Hwa Suk.....	WP 246	Kim, Yeoun Jin.....	WP 516	Klee, Sonja	TP 070
Kim, Hyosoo.....	ThP 589	Kim, Yong-Sam	ThP 628	Klee, Sonja	TP 071
Kim, Hyun Sik.....	WP 030	Kim, Young Hun	WP 245	Kleffmann, Joerg	MP 006
Kim, Hyun Sik.....	WP 353	Kim, Young Hun	WP 244	Klein, Adam	MP 631
Kim, Hyun Sik.....	ThP 261	Kim, Young Hwan.....	MP 236	Klein, Christian	MP 100
Kim, Hyun Sik.....	TP 113	Kim, Young Hwan.....	ThP 270	Klein, Larry	WP 240
Kim, Hyun Sik.....	ThP 072	Kim, Young Hwan.....	TP 577	Kleinholz, Nan M	ThP 277
Kim, Hyun Sik.....	ThP 489	Kim, Young mi	WP 247	Klemmer, Patricia	MP 614
Kim, Hyungjun.....	TP 137	Kim, Youngchang	WP 221	Kleyner, Igor	ThP 074
Kim, Hyunsoo.....	ThP 589	Kim, Youngjae	MP 174	Kline, Kelli.....	MOE pm 4:10
Kim, Hyunsoo.....	TP 531	Kim, Youngjae	WP 682	Klinger, Kristina	TP 266
Kim, Jaehan	MP 277	Kim, Youngkook	WP 341	Klingler, Diana	TP 468
Kim, Jae-Han.....	ThOD am 09:50	Kim, Youngkook	WP 342	Klink, Dennis	MP 002
Kim, Jaekuk	TOG am 08:50	Kim, Young-Mo	WP 234	Klink, Dennis	MP 003
Kim, Jaekuk	WP 089	Kim, Young-Mo	WP 220	Klink, Dennis	TP 068
Kim, Jaekuk	ThP 138	Kim, Youngsoo.....	TP 531	Klitzke, Clécio	TP 291
Kim, Jeongkwon.....	ThP 154	Kim, Youngsoo.....	ThP 589	Klitzke, Clecio F.....	TP 306
Kim, Jeongkwon.....	ThP 145	Kim, Youngsoo.....	WP 507	Kloos, Dick-Paul	WP 292
Kim, Jeongkwon.....	WP 030	Kimura, Tomoko.....	MP 362	Klopotowski, Sebastian.....	TP 071
Kim, Jin Young	TP 672	Kind, Tobias	TP 203	Klopotowski, Sebastian.....	TP 070
Kim, Jinyoung.....	MP 160	Kind, Tobias	WP 365	Klughammer, Barbara	WOF pm 2:30
Kim, Jitae	MOE pm 3:10	Kind, Tobias	WP 303	Klumpp, Susanne	ThP 659
Kim, Joseph C.....	ThP 172	King, Bill	TP 168	Kmiec, Kevin	WP 495
Kim, Joung-Hoon	WP 630	King, Fred	TP 487	Kmiec, Kevin	WP 494
Kim, Junghyun.....	ThP 170	King, Fred	MP 118	Knapman, Tom W.....	ThP 671
Kim, Junghyun.....	ThP 169	King, Kristopher	ThP 123	Knapp, Stefan.....	ThP 633
Kim, Junhwan.....	ThP 293	King, Lloyd.....	ThP 635	Knapp, Stefan.....	MOB pm 4:10
Kim, Junseok.....	TP 671	King, Richard.....	WP 524	Knapp, Stefan.....	TP 482
Kim, Justin	TP 128	King, Richard.....	WP 526	Knaust, Andrea	TP 467
Kim, Kee-Pyo.....	MP 307	Kingston, H. M. Skip	WP 679	Knegt, Lena	TP 263
Kim, Kimoon	WP 342	Kingston, H. M. Skip	TP 366	Knoener, Rachel	WP 709
Kim, Kimoon	WP 341	Kingston, H. M. Skip	WP 043	Knott, Jeff	ThP 498
Kim, Kwang Pyo	MP 236	Kinniburgh, David.....	TP 319	Knust, Matthias	ThOC am 08:30
Kim, Kwang Youl.....	WP 127	Kinsel, Gary R.....	MP 652	Knyazev, Vadim	WP 492
Kim, Kyung Mi	MP 155	Kinsel, Gary R.....	TP 470	Ko, Byoung Joon	WP 029
Kim, Kyunggon	ThP 589	Kinsinger, Chris.....	Special 002	Ko, Jeong Heon.....	ThP 628
Kim, Marcus	TP 368	Kirchner, Marc	TOA pm 3:10	Ko, Ting-Chang.....	WOC pm 3:50
Kim, Meehye	MP 070	Kirchner, Marc	ThP 544	Koal, Therese.....	TOG am 10:10
Kim, MI Joung	WP 630	Kirchner, Marc	TP 624	Koal, Therese.....	MP 321

INDEX OF AUTHORS

Kobaiassy, Firas.....	WP 649	Kordwitz, Emily.....	WP 560	Kristensen, Jacob.....	TP 399
Kocan, GERALYN.....	TP 256	Korfmacher, Walter.....	TOF pm 4:10	Kristensen, Jacob.....	ThP 401
Koch, Boris.....	ThP 360	Korman, Eric.....	WP 161	Krizman, David.....	ThP 525
Koch, Defne C.....	ThP 657	Korman, Eric W.....	WP 160	Krizman, David.....	WP 164
Koch, Joachim.....	MOD am 08:30	Kormos, Jennifer.....	TOB am 08:30	Krock, Kevin.....	ThP 661
Köcher, Thomas.....	WOA pm 3:30	Korte, Andrew.....	WP 451	Krogh, Erik T.....	ThP 355
Kochhar, Rashi.....	MP 182	Korte, Andrew.....	WP 425	Krogh, Erik T.....	ThP 035
Koehler, Christoph.....	WP 364	Kosaka, Reia.....	WP 215	Krogh, Erik T.....	ThP 356
Koenig, Simone.....	ThP 659	Koshino, Hiroyuki.....	ThP 329	Krogh, Erik T.....	MP 387
Koeniger, Stormy.....	WOF am 09:50	Koster, Emile.....	TP 263	Krokhin, Oleg.....	TP 458
Koester, Claus.....	TP 403	Kostko, Oleg.....	WP 453	Krokhin, Oleg.....	TP 718
Koester, Hubert.....	ThP 613	Kostko, Oleg.....	ThP 038	Krokhin, Oleg V.....	ThP 350
Köfeler, Harald.....	ThP 263	Kostrzewa, Markus.....	MP 388	Krokhin, Oleg V.....	MP 687
Koga, Akiko.....	TP 153	Kostyukevich, Yury.....	MP 101	Krokhin, Oleg V.....	MP 228
Koh, Jae Suk.....	WP 334	Kostyukevich, Yury.....	MP 102	Kroll, Friedrich.....	ThP 613
Kohajda, Tibor.....	WP 628	Kota, Uma.....	MP 204	Kronewitter, Scott R.....	WOD am 08:50
Kohl, Kristian.....	TP 538	Kothandaraman, Narasimhan.....	ThP 260	Kronewitter, Scott R.....	TP 160
Kohlbacher, Oliver.....	ThP 410	Koudstaal, Peter J.....	TP 667	Kropat, Janette.....	MP 534
Kohlbacher, Oliver.....	ThP 398	Kovac, Andrej.....	MP 566	Kros, Johan M.....	TP 667
Kohler, Laurent.....	WP 201	Kovac, Paul.....	TP 520	Krska, Rudolf.....	MP 423
Kohr, Mark.....	WP 460	Kovacech, Branislav.....	MP 566	Krudysz-Amblo, Jolanta.....	MP 229
Koizumi, Eiko.....	ThP 023	Kovalev, Sergey.....	MP 678	Krueger, Dana.....	TP 094
Koizumi, Eiko.....	ThP 026	Kovarik, Peter.....	ThP 314	Krueger, Erin.....	ThP 324
Koizumi, Eiko.....	ThP 048	Kovarik, Peter.....	MP 024	Krueger, Ingolf.....	ThP 405
Koizumi, Hideya.....	ThP 023	Kovarik, Peter.....	ThP 096	Krueger, Marcus.....	ThP 411
Koizumi, Hideya.....	ThP 059	Kowalak, Jeffrey A.....	MP 612	Krueger, Sharon K.....	TP 248
Koizumi, Hideya.....	ThP 048	Kowalska, Magdalena.....	MP 108	Krug, Daniel.....	WP 305
Koizumi, Hideya.....	ThP 026	Kowalski, Matthew.....	ThP 349	Krug, Karsten.....	MP 616
Kok, Fernando.....	WP 154	Kowalski, Paul.....	MP 407	Krug, Karsten.....	MP 514
Kokesch, Julia.....	MOD am 09:50	Kowalski, Paul J.....	MP 476	Krüger, Marcus.....	MP 509
Kolawa, Natalie.....	WP 393	Koy, Cornelia.....	ThP 652	Krumeich, Frank.....	MOD am 08:30
Kolb, Janet.....	WP 259	Koy, Cornelia.....	WP 596	Krupa, Kristin.....	WP 560
Kolippakkam, Deepak.....	MP 440	Koy, Cornelia.....	TP 615	Kruve, Anneli.....	MP 432
Koller, Agathe.....	ThP 208	Koyuncu, Emre.....	ThP 606	Krynitsky, Alexander.....	MP 416
Koller, Antonius.....	TP 631	Kozak, Marta.....	TP 316	Kshirsagar, Rashmi.....	TP 632
Kolossova, Nataliya.....	ThP 531	Kozak, Marta.....	ThP 127	Ku, Kuo-Lung.....	WP 219
Kolykhmatov, Ilya.....	ThOA am 09:30	Kozak, Marta.....	WP 077	Ku, Kuo-Lung.....	ThP 336
Komarov, Alexander.....	ThP 308	Kozak, Marta.....	MP 352	Ku, Kuo-Lung.....	ThP 100
Komatsu, Sachiko.....	ThP 268	Kozhinov, Anton N.....	MP 096	Kubo, Akiharu.....	ThP 442
Komuro, Setsuko.....	MP 655	Kozhinov, Anton N.....	TP 101	Kubo, Akiko.....	WP 439
Koncarevic, Sasa.....	MP 502	Kozin, Sergey.....	ThP 479	Kubo, Akiko.....	ThP 442
Konda, Chiharu.....	TP 171	Kozin, Sergey.....	ThP 669	Kubo, Ayumi.....	MP 240
Konda, Chiharu.....	WOD pm 3:30	Kozlowski, Rachel.....	MP 244	Kubo, Ayumi.....	ThP 333
Kondo, Jun.....	TP 629	Kraemer, Thomas.....	ThP 379	Kubo, Ayumi.....	TP 346
Konermann, Lars.....	TP 472	Kraeutler, Bernhard.....	ThP 424	Kubo, Ayumi.....	TP 345
Konermann, Lars.....	TOD am 08:50	Kragerud, Scott.....	ThP 358	Kubo, Ayumi.....	MP 135
Konermann, Lars.....	TP 003	Krainer, Adrian.....	MP 515	Kubo, Kinya.....	WP 266
Konermann, Lars.....	MP 634	Kraj, Agnieszka.....	TP 210	Kubota, Masayuki.....	TP 182
Konermann, Lars.....	TP 471	Kraj, Agnieszka.....	WP 617	Kudo, Masato.....	ThP 062
Konermann, Lars.....	WP 533	Krakovska, Olga.....	ThP 698	Kuhn, Eric.....	TP 688
Konermann, Lars.....	MP 623	Krakovska, Olga.....	MP 688	Kuhn, Eric.....	WP 507
Konermann, Lars.....	ThP 550	Kramer, Katharina.....	ThOD pm 2:30	Kuhn, Jeffrey F.....	TP 643
Konermann, Lars.....	MOB pm 2:30	Krasinska, Karolina M.....	MP 292	Kuhn, Karsten.....	MP 502
Kong, Ricky P. W.....	WP 485	Krasnoslesky, Alexei L.....	TP 630	Kuhn, Karsten.....	TP 686
Kong, Ricky P. W.....	WP 325	Krasny, Lukas.....	ThP 418	Kuhn, Ken.....	ThP 064
Kong, Xianglei.....	TP 499	Krastins, Bryan.....	TP 103	Kühn, Andreas.....	MP 602
Konicek, Michael G.....	ThP 025	Krause, Eberhard.....	MP 510	Kukula, Kirsten.....	TP 637
Konigshofer, Yves.....	MP 553	Krause, Joern.....	ThP 399	Kulick, Alison.....	WP 665
Kononikhin, Alexey.....	MP 010	Krauss, Ronald.....	ThOA pm 3:10	Kulick, Alison.....	ThP 533
Kononikhin, Alexey.....	ThP 479	Krebs, Ilmari.....	TP 099	Kulik, Michael.....	TP 526
Kononikhin, Alexey.....	ThP 359	Krebs, Ilmari.....	MP 408	Kulkarni, Meghana.....	WP 395
Kononikhin, Alexey.....	ThP 669	Krechmer, Jordan.....	TP 078	Kulkarni, Nikita.....	TP 118
Konuma, Kiyotaka.....	ThP 218	Krechmer, Jordan.....	TP 038	Kulkarni, Swati.....	WP 129
Konus, Metin.....	WP 596	Kreft, Rachael.....	WP 350	Kultima, Kim.....	MP 505
Konzer, Anne.....	MP 509	Kreim, Susanne.....	MP 108	Kumano, Shun.....	MP 395
Konzer, Anne.....	ThP 411	Kreitinger, Gloria.....	WP 709	Kumar, Anil.....	WP 243
Koo, Imhoi.....	WP 362	Krek, Wilhelm.....	MP 690	Kumar, Anuj.....	TP 387
Koomen, John.....	ThP 238	Kremser, Leopold.....	ThP 488	Kumar, Mukesh.....	ThP 456
Koopmeiners, Joseph.....	MP 689	Kremser, Leopold.....	TP 539	Kumar, Naresh.....	TP 480
Kooren, Joel.....	TP 398	Kremser, Leopold.....	TP 063	Kumar, Praveen.....	ThP 697
Kopaev, Igor.....	ThP 081	Krencik, Robert.....	TP 661	Kumar, Praveen.....	ThP 696
Kopkin, Rachel.....	MP 226	Kridl, Jean C.....	ThP 305	Kumar, Praveen.....	TP 635
Kopoyan, Andre.....	WP 644	Kriegelstein, Josef.....	ThP 659	Kumar, Praveen.....	TP 638
Koppmann, Ralf.....	MP 006	Krishnamurthy, Srinath.....	MOB pm 3:30	Kumar, Santhosh.....	WP 243
Kopylova, Lyudmila.....	ThP 531	Krisp, Christoph.....	WP 660	Kumar, Suresh.....	TP 695
Koranda, Manfred.....	ThP 157	Kristal, Bruce.....	ThP 286	Kumari, Sangeeta.....	MP 322
Kord, Alireza S.....	ThP 180	Kristal, Bruce.....	TOC am 09:10	Kumari, Sangeeta.....	TP 203

INDEX OF AUTHORS

Kummerow, Gerhard	WP 648	Lai, Cheuk Kuen	ThP 452	Langman, Loralie J.	WP 160
Künemeyer, Jens	TP 239	Lai, Cheuk-Kuen	WP 485	Langridge, David	ThP 021
Kunte, Robert	TP 069	Lai, Chien-Chen	MP 488	Langridge, James	ThOE am 09:50
Kunz, Ryan	ThP 510	Lai, Christopher C.	MP 527	Langridge, James	ThOB pm 3:50
Kunz, Ryan	WP 613	Lai, Christopher C.	WP 118	Langridge, James I	ThP 614
Kunz, Ryan C.	ThOA pm 4:10	Lai, Xianyin	WP 383	Langridge, James I	WP 473
Kuo, Ming-Shang	ThP 262	Lai-Rowcroft, Lindsay	ThP 162	Langridge, Jim	MP 584
Kuo, Yin-Ming	MP 543	Lake, Douglas	TP 683	Langridge, Jim	ThOF am 09:30
Kuo, Yin-Ming	TP 646	Lakshmanan, Rajeswari	TP 007	Langridge, Jim	TP 148
Kuo, Yun-Wei	MP 496	Lakshmanan, Rajeswari	TP 006	Langridge-Smith, Pat	ThP 434
KuoLee, Rhonda	MP 545	Lalli, Priscila	TP 139	Langridge-Smith, Pat	WP 351
Kuppannan, Krishnamoorthy	TP 565	Lalli, Priscila	TP 150	Langridge-Smith, Pat	TP 562
Kuramitsu, Seiki	ThP 562	Lalor, Patricia	TP 425	Langridge-Smith, Pat	TP 559
Kurihara, Kana	WP 215	Lalwani, Anil	TP 600	Langridge-Smith, Pat	ThP 458
Kurland, Irwin	WP 235	Lam, Bonita	TP 570	Langridge-Smith, Patrick	MP 442
Kurono, Sadamu	TP 692	Lam, Byron	ThP 278	Langsdorf, Markus	MP 328
Kurulugama, Ruwan	WOB am 10:10	Lam, Gilbert	MP 167	Langsdorf, Markus	MP 268
Kurulugama, Ruwan	ThP 033	Lam, Henry	WP 369	Lankford, Patricia	TP 640
Kurulugama, Ruwan	MP 590	Lam, Henry H.	MP 431	Lankmayr, Ernst	ThP 263
Kurumbail, Ravi G	TP 479	Lam, Henry H.	WP 381	Lanni, Eric	ThP 416
Kurumizaka, Hitoshi	WP 535	Lam, Henry H.	ThP 386	Lanni, Eric J.	ThP 239
Kusebauch, Ulrike	WP 381	Lam, Henry H. N.	ThOC pm 3:30	Lanz, Rainer	MOA am 08:50
Kusebauch, Ulrike	WP 505	Lam, Herman	MP 410	Lapek, John	TP 558
Kusin, David	WP 235	Lam, Herman C.	WP 325	Lapek, John	WP 475
Kusmann, Martin	MP 501	Lam, Hon-Ming	TP 596	Lapek, John	TP 431
Kuster, Bernhard	ThP 464	Lam, Justine	WP 415	Laprade, Bruce	ThP 047
Kuster, Bernhard	ThP 584	Lam, Karen P.	MP 355	Laprèvote, Olivier	TOF pm 3:50
Kuster, Bernhard	TP 538	Lam, Kit	ThOD am 09:50	Laprèvote, Olivier	WP 407
Kuwahara, Hiroshi	MP 655	Lam, Kit	WOG am 09:30	Laprèvote, Olivier	ThP 269
Kuyama, Hiroki	ThP 534	Lam, Wing W	WP 281	Laprèvote, Olivier	MOD pm 3:10
Kuznetsov, Ilya	MP 018	Lamarche, Brian	WP 377	Laprèvote, Olivier	TP 016
Kuznetsov, Ilya	ThP 445	LaMarche, Brian L.	TP 160	Lapthorn, Cris	ThP 097
Kvaratskhelia, Mamuka	WP 705	Lamarche, Brian L.	ThP 088	Lapushkin, Mikhail	TP 075
Kwasnik, Mark	TP 033	Lamarr, William A.	WP 160	Larance, Mark	TP 704
Kweon, Hye Kyong	WP 350	Lamarr, William A.	WP 161	Larance, Mark	TP 711
Kweon, Hye Kyong	TP 387	Lamarr, William A.	ThP 192	Lardinois, Olivier	ThP 532
Kweon, Hye Kyong	ThP 526	Lamarr, William A.	ThP 214	Laremore, Tatiana	TP 184
Kwok, Sun-Tat	WP 505	Lamarr, William A.	WP 162	Laremore, Tatiana	WOD pm 2:30
Kwok, W. H.	MP 157	Lambert, John	TP 512	Larriba Andaluz, Carlos	TP 138
Kwon, Oh-Seung	ThP 168	Lambert, Wendi	ThP 432	Larsen, Barbara S.	TOB pm 2:30
Kwon, Sang Oh	TP 577	Lame, Mary	WP 172	Larsen, Brett	WP 707
Kwon, Yoowook	ThP 589	Lame, Mary E	MOG am 09:10	Larsen, Brett	MP 610
La, Sookie	MP 155	Lamendella, Regina	ThOC pm 3:50	Larsen, Brett	MP 202
La, Sookie	ThP 173	Lamendella, Regina	TP 621	Larsen, Brett	ThP 406
Labelle, Bruce	MP 368	Lamerz, Jens	WOF pm 2:30	Larsen, Martin R.	MP 486
Labenski, Matthew	ThP 185	Lamkin, Elizabeth	TP 611	Larsen, Martin R.	ThP 518
Labhan, Manbir	ThP 209	Lammert, Steve	ThP 061	Larson, Anna E.	ThP 519
Labrador, Mauro Martinez	TP 287	Lamond, Angus	TP 704	Larson, Anna E.	ThP 014
Labranche, Louis-Philippe	MP 254	Lamond, Angus	TP 711	Larson, Douglas F.	MP 659
Lacey, Jean M.	MP 347	Lamont, Douglas J.	MP 479	Larter, Steve	TP 301
Lachance, Sylvain	TP 258	Lamourette, Patricia	MP 389	Lashin, Vitaly	WOF pm 4:10
Lachance, Sylvain	TP 270	Lampe, A.M.	ThP 608	Lashin, Vitaly	TP 197
Lachance, Sylvain	TP 271	Lampkins, Andrew	WP 265	Laskay, Ünige A.	WP 002
Lachance, Sylvain	TP 272	Lampron, Nancy	ThP 469	Laskin, Julia	MOD am 09:10
Lachance, Sylvain	TP 277	Landgraf, Rachelle R.	WP 555	Laskin, Julia	WOC pm 3:10
Lachance, Sylvain	WP 146	Landgraf, Rachelle R.	MOB am 09:10	Laskin, Julia	ThOC pm 3:10
Lachance, Sylvain	ThP 469	Landgraf, Rachelle R.	TP 479	Laskin, Julia	MP 542
Lachance, Sylvain	TP 273	Landry, Nathalie	ThP 655	Laskin, Julia	MP 114
Lachance, Sylvain	TP 255	Lane, Andrew	MP 316	Lassahn, Paul-Gerhard	TP 226
Lacina, Ondrej	WP 222	Lane, Cathy	WP 517	Lassman, Michael	ThP 533
LaCourse, William R.	WP 207	Lane, Katie	ThP 266	Lassman, Michael	WP 665
Lacoursière, Jean	WP 144	Lang, Diana	MP 510	Lassman, Michael	MP 171
Ladror, Daniel T.	TP 564	Lang, Phillip	MP 487	Lassman, Michael	TP 678
Lady, Kyle	WOF am 08:30	Lange, B. Markus	WP 426	Lateef, Syed Salman	TP 201
Laffoon, Scott	TP 665	Lange, Oliver	MP 093	Lateef, Syed Salman	TP 699
Lafitte, Daniel	MP 567	Lange, Oliver	MP 560	Lategan, Carmen	ThP 334
Lafond, Monika	TP 274	Lange, Oliver	MP 107	Lathrop, Hillary	MP 080
Lafontaine, Catherine	TP 370	Lange, Oliver	WOE pm 2:30	Latiff, Aishah A.	WP 356
Lafrance, Claude-Paul	TP 249	Lange, Oliver	MP 103	Latour, Sylvain	MP 149
Lagache, Sophie	MP 501	Lange, Oliver	TP 706	Latour, Sylvain	MP 142
Lah, James	WP 592	Lange, Oliver	WP 082	Lattova, Erika	TP 513
Lah, James	WP 393	Langen, Hanno	WOF pm 2:30	Lau, Serrine S.	WP 657
Lah, James	TP 666	Langish, Robert	MP 263	Lau, Thomas Y.K.	WP 523
Lahaie, Mathieu	MP 149	Langlais, Claudia	ThP 590	Lauber, Matthew	WP 585
Lahaie, Mathieu	MP 148	Langley, G. John	MP 121	Lauber, Matthew	WP 584
Lahey, Cynthia Melanie	TP 357	Langley, G. John	MP 301	Laudicina, Don	ThP 091
Lahey, Cynthia Melanie	MP 072	Langman, Loralie	WP 161	Laue, Alexander	TP 421

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Laue, Alexander	ThP 078	Lebrilla, Carlito	TP 506	Lee, Pin-Duo	ThP 375
Laue, Alexander	ThP 063	Lebrilla, Carlito	WOG am 09:30	Lee, Pin-Duo	ThP 370
Laue, Alexander	TP 051	Lebrilla, Carlito	ThP 484	Lee, Ren-Jye	ThP 365
Lauer, Janelle	TP 480	Lebrilla, Carlito	WOD pm 3:50	Lee, Sang Beom	ThP 489
Lauer, Janelle	MOB am 09:10	Lebrilla, Carlito	TP 168	Lee, Sang Beom	TP 113
Lauga, Beatrice	MP 303	Lebrilla, Carlito B.	MP 275	Lee, Sang Beom	WP 353
Laughlin, Brian C.	ThP 302	Lebrilla, Carlito B.	WOD am 08:50	Lee, Sangkyu	TP 436
Laughlin, Brian C.	MP 030	Lebrilla, Carlito B.	TP 161	Lee, Seunghwan	WP 264
Lauman, Richard	ThP 201	Lecchi, Paolo	MP 260	Lee, Shui-Cheng	MP 684
Laumen, Richard	WP 088	Lechtenfeld, Oliver	ThP 360	Lee, Shwu-Maan	TP 117
Laura, Cojocar	MP 166	Leclaire, Brett	ThP 193	Lee, Sunyoung	ThP 154
Laurent, Boyd A.	TP 347	Leclercq, Laurent	MP 574	Lee, Sunyoung	ThP 145
Laurent, Leclercq	TP 224	Ledentu, Vincent	WP 062	Lee, Sunyoung	TOE pm 2:30
Laux, Ralf	WP 267	Ledvina, Aaron	TP 086	Lee, Sunyoung	ThP 043
Lavery, Paddy	ThP 458	Ledvina, Aaron	WP 011	Lee, Susan	ThP 549
Lavins, Eric S.	ThP 373	Ledvina, Aaron	ThOB pm 4:10	Lee, Terry	TP 616
Lavorato, David J.	WP 214	Ledvina, Aaron R.	TOE pm 3:10	Lee, Terry	MOB am 08:30
Lavrynenko, Oksana	ThP 280	Ledvina, Aaron R.	MP 572	Lee, Terry D.	WP 566
Lawley, Trevor	MP 536	Ledvina, Aaron R.	ThP 014	Lee, Theresa	WP 258
Lawson, Graham	TP 236	Lee, Albert	TP 108	Lee, Thomas	MP 658
Lawson, Graham	TP 083	Lee, Cheng S.	MP 692	Lee, Thomas	TP 473
Lay Jr, Jackson O.	ThP 440	Lee, Chun-Te	ThP 366	Lee, Thomas	TP 474
Laycock, John	ThP 201	Lee, Daeseung	WP 221	Lee, Ya-Zhe	ThP 271
Layfield, Robert	WP 546	Lee, Edgar	MP 083	Lee, Yong Moon	ThP 261
Layne, Jeff	TP 314	Lee, Edgar	ThP 061	Lee, Yong-Moon	ThP 489
Layne, Jeff	TP 122	Lee, Hee Joo	MP 155	Lee, Yong-Moon	MP 359
Layssac, Marion	WP 079	Lee, Hee Joo	ThP 173	Lee, Young Jin	MOE am 09:30
Layssac, Marion	WOF am 10:10	Lee, Hian Kee	MP 072	Lee, Young Jin	ThP 420
Lazar, Alex	TP 512	Lee, HooKeun	WP 630	Lee, Young Jin	MP 631
Lazar, Jozef	WP 709	Lee, Hyeyeon	ThP 170	Lee, Young Jin	ThP 340
Lazarev, Alexander V.	ThP 211	Lee, Hyeyeon	ThP 169	Lee, Young Jin	WP 451
Lazzari, Paolo	ThP 179	Lee, Hyeyoung	TOG am 09:10	Lee, Young Jin	ThP 337
Le, Anh	TP 392	Lee, Hyun-Chul	TP 309	Lee, Young Jin	WP 425
Le, Cuong H.	WP 449	Lee, Hyun-Seok	MP 359	Lee, Young Jin	ThP 220
Le, Nguyen T.	MOA am 08:50	Lee, Jae Won	ThP 281	Lee, Youngshin	MP 160
Le, Thuc	MP 307	Lee, Jee Young	WP 630	Lee, Yuan-Chuan	TP 166
Le Bizec, Bruno	WP 072	Lee, Jeong-Eun	TP 309	Leerkens, Maarten	MP 205
Le Bizec, Prof. Bruno	TP 363	Lee, Jeonghoon	ThP 059	Lees-Miller, Susan	TP 500
Le Gorrec, Madalen	MP 683	Lee, Ji Eun	WOA am 10:10	Legette, LeeCole	WP 349
Le Naour, François	ThP 491	Lee, Ji Hyoung	ThP 407	Legido-Quigley, Cristina	MP 196
Le Tot, Clotilde	ThP 071	Lee, Jin-Joo	TP 373	Legouffe, Raphael	TOF pm 2:50
Leach, Steven	TP 638	Lee, Ji-Young	MP 177	Legouffe, Raphael	TOF pm 3:50
Leach III, Franklin E.	TP 184	Lee, John	WP 677	Lei, Zhentian	ThP 258
Leach III, Franklin E.	TP 175	Lee, JongHo	TP 358	Leich, Ellen	MOD pm 4:10
Leach III, Franklin E.	MP 094	Lee, JongHo	TP 359	Leigh, Daniel	MP 356
Leach III, Franklin E.	WOD pm 2:30	Lee, Jong-Hyuck	TP 360	Leinenbach, Andreas	WP 159
Leary, Julie A.	WP 548	Lee, Jongsik	ThP 415	Leitch, Matthew	WP 569
Leary, Julie A.	ThP 555	Lee, Jongsik	ThP 140	Leitner, Alexander	WP 583
Leary, Julie A.	ThP 532	Lee, Ju Yeon	TP 672	Lekpor, Kossi	WP 566
Leary, Julie A.	MP 279	Lee, Katherine	WP 238	Lekpor, Kossi	ThP 278
Leavitt, Christopher	ThP 011	Lee, Kristen	WP 518	Lekpor, Kossi	MOB am 08:30
Leavitt, Christopher	MOC pm 4:10	Lee, Kwangwon	TP 581	Lemaire, Joel	TP 071
LeBeau, Marc A.	ThP 377	Lee, Kyeong-Seok	MP 359	Lemaire, Joel	MP 382
LeBeau, Marc A.	WP 211	Lee, Kyung Hyeon	ThP 173	LeMauff, François	ThP 655
Lebedev, Albert T.	MP 497	Lee, Laurance	WP 015	Lembcke, Jan	TP 266
Lebedev, Albert T.	TOB pm 3:10	Lee, Lik Wee	MP 656	Lemeer, Simone	TP 538
Leblanc, André	WP 481	Lee, Lik Wee	WP 390	Lemiere, Filip	MP 242
LeBlanc, André	MP 624	Lee, Lik Wee	MP 679	Lemière, Filip	TP 146
Leblanc, J.C. Yves	WP 214	Lee, M. Violet	TP 461	Lemoine, Jerome	ThP 447
Leblanc, J.C. Yves	WP 526	Lee, M. Violet	MOA am 09:10	Lemoine, Jérôme	WOE pm 3:10
Leblanc, J.C. Yves	TP 135	Lee, M. Violet	ThP 519	Lemr, Karel	TP 066
Leblanc, J.C. Yves	WP 327	Lee, M. Violet	ThOE am 08:50	Lenco, Juraj	WP 606
Leblanc, J.C. Yves	ThP 472	Lee, M. Violet	TP 400	Lendal, Sara Eun	ThP 568
Leblanc, J.C. Yves	WP 120	Lee, M. Violet	TOE pm 3:10	Lennon, John J.	TP 190
Leblanc, J.C. Yves	MP 037	Lee, Maw-Rong	ThP 118	Lenz, Thomas	ThP 613
Leblanc, J.C. Yves	ThP 171	Lee, Maw-Rong	TP 356	Leone, Stephen R.	WP 453
Leblanc, J.C. Yves	MP 436	Lee, Maw-Rong	TP 324	Leone, Stephen R.	ThP 038
Leblanc, J.C. Yves	MP 051	Lee, Maw-Rong	ThP 365	Lepage, Marie-Noelle	WP 668
Leblanc, Yves G.	MP 254	Lee, Mike S.	WP 142	Lepene, Ben	TP 655
Lebold, Katie	ThP 229	Lee, Mike S.	TP 682	Lepist, Eve-Irene	WP 273
Lebrilla, Carlito	MP 274	Lee, Mike S.	ThP 206	Lequin, Olivier	MP 478
Lebrilla, Carlito	ThOD am 09:50	Lee, Milton	MP 083	Lerno, Larry	ThP 275
Lebrilla, Carlito	ThP 275	Lee, Myung-Hoon	TP 309	Leroi, Armand	MP 317
Lebrilla, Carlito	TOG am 09:10	Lee, Norman H.	MP 669	Lerouge, Patrice	ThP 655
Lebrilla, Carlito	MP 276	Lee, Patrice	TP 235	Leroy, Gary	WP 710
Lebrilla, Carlito	MP 277	Lee, Peter	TP 332	Leroy, Gary	TP 433
Lebrilla, Carlito	MP 694	Lee, Peter	MP 032	Leroy, Gary	ThOA pm 3:50

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Leroy, Gary	TP 430	Li, Guangtao	TP 283	Li, Xiaolin	WP 510
Lesage, Denis	WP 125	Li, Guangtao	TP 018	Li, Xiao-Lin	MP 098
Lesage, Denis	TP 478	Li, Guangtao	WOC pm 2:30	Li, Xiaopeng	ThOC am 09:10
Leslie, Andrew	TP 637	Li, Guangtao	ThOG pm 2:50	Li, Xiaopeng	TP 131
Leszyk, John D.	TP 465	Li, Guodong	WP 176	Li, Xiaopeng	MP 267
Leszyk, John D.	MP 252	Li, Hua	MP 390	Li, Xiaoqing	ThP 374
Leszyk, John D.	WP 576	Li, Huilin	TP 561	Li, Xin	TP 283
Leung, Adam	TP 040	Li, Huiyuan	TOD pm 4:10	Li, Xin	TP 018
Leung, Albert Wing Nang	TP 596	Li, Jianjun	MP 545	Li, Xing-Fang	TOB pm 2:50
Leung, Eastwood	WP 085	Li, Jinxi	ThP 528	Li, Xing-Fang	MP 384
Leung, Kwan	WP 519	Li, Jun	ThOF pm 3:10	Li, Xing-Fang	MP 383
Leung, Kwan	WP 273	Li, Jun	ThP 674	Li, Yan	ThP 490
Leung, Rufina	TP 686	Li, Jun	ThP 599	Li, Yanyan	MP 252
Levenstein, Mark	WP 709	Li, Jun	WP 467	Li, Yanyan	MP 250
Levesque, Ann	TP 255	Li, Jun	ThP 678	Li, Yi-Chung	ThP 686
Lévesque, Ann	ThP 469	Li, Ka Wan	MP 614	Li, Yihan	WP 622
Lévesque, Ann	TP 277	Li, Kejing	TP 284	Li, Yiming	ThP 319
Lévesque, Ann	TP 268	Li, Lan	WP 522	Li, Ying	WP 259
Lévesque, Ann	TP 258	Li, Li	WP 541	Li, Yinyin	TP 547
Lévesque, Ann	TP 269	Li, Li	TP 066	Li, Yiwen	TP 131
Lévesque, Ann	TP 270	Li, Liang	MP 578	Li, Yong Fuga	WP 397
Lévesque, Ann	WP 146	Li, Liang	MP 337	Li, Yongchao	WP 012
Lévesque, Ann	TP 272	Li, Liang	MP 164	Li, Yong-Xi	TP 245
Lévesque, Ann	TP 271	Li, Liang	WP 371	Li, Yong-Xi	WP 249
Lévesque, Ann	TP 273	Li, Liang	MP 565	Li, You	WP 073
Lévesque, Ann	TP 267	Li, Liang	MP 579	Li, Yuanyuan	TP 276
Lévesque, Isabelle A.	TP 268	Li, Liang	TP 116	Li, Yuanyuan	ThP 380
Lévesque, Isabelle M.	TP 268	Li, Liang	TP 593	Li, Zhiguang	ThOF pm 3:30
Lévesque, Isabelle M.	TP 272	Li, Liang	MP 159	Li, Zhili	ThP 581
Levey, Allan	TP 666	Li, Liang	MP 315	Li, Zhongshu	TOE am 09:10
Levey, Allan	WP 393	Li, Liang	MP 338	Li, Zhou	MP 532
Levey, Allan	WP 592	Li, Liang	TP 207	Liaghati Mobarhan, Yalda	MP 623
Levi, Mark S.	TP 251	Li, Liang	TP 200	Liang, Feng	WP 145
Levin, David	TP 718	Li, Lily	ThP 461	Liang, Guqing	WP 112
Levin, David B.	ThP 350	Li, Lily	ThP 467	Liang, Hongkun	WP 239
Levitsky, Lev I.	MP 443	Li, Ling	WP 646	Liang, Hongkun	TP 240
LeVoci, Lauretta	TP 678	Li, Lingjun	MP 473	Liang, Jen Tse	WP 219
Levorse, Mark	WP 182	Li, Lingjun	MP 474	Liang, Yuxue	ThOA am 09:50
Levy, Michaela J.	TP 492	Li, Lingjun	TP 576	Liang, Zhenmin	ThP 184
Lewis, Avalyn	TP 200	Li, Lingjun	MP 472	Liang, Zhidan	MP 475
Lewis, Darren	ThP 212	Li, Lingjun	ThP 439	Liao, Jhe-Yi	ThP 336
Lewis, Ernest K.	TP 140	Li, Lingjun	TP 447	Liao, Lujian	WP 697
Lewis, Jeff	WP 521	Li, Lingjun	ThP 680	Liao, Pao-Chi	WP 654
Lewis, Ken	TOG pm 2:50	Li, Lingjun	TP 661	Liao, Qing	MP 305
Lewis, Matthew R.	ThP 250	Li, Lingjun	MP 475	Liao, Wei-Li	WP 164
Lewis, Matthew R.	ThP 197	Li, Lingjun	MP 481	Liao, Wei-Li	ThP 525
Lewis, Michael	TP 669	Li, Lingjun	MP 471	Liberatore, Matthew	TP 284
Lewis, Michael	TP 115	Li, Ming	TOA am 09:10	Lidstrom, Mary	MP 332
Lewis, Norman	WP 426	Li, Mingxi	WOA am 10:10	Liebler, Daniel	TP 685
Lewis-Stanislaus, Avalyn	MP 159	Li, Mingxi	ThOD am 09:10	Liebler, Daniel C.	TP 691
Lewiston, David	MP 167	Li, Mingxi	ThP 605	Liebler, Daniel C.	WOA pm 4:10
Lewis-Torpey, Kathleen	ThP 462	Li, Na	TP 463	Liebler, Daniel C.	ThOA am 08:30
Leylek, Ahmet	MP 687	Li, Ning	TP 119	Liebler, Daniel C.	ThP 397
Leymarie, Nancy	ThP 580	Li, Ning	TP 118	Liebler, Daniel C.	ThP 604
Leymarie, Nancy	TP 376	Li, QiuHong	WP 409	Liebler, Daniel C.	MP 693
Leymarie, Nancy	ThP 607	Li, Quan	TP 234	Liebler, Daniel C.	ThP 602
Leymarie, Nancy	MP 282	Li, Rong'an	WP 263	Liebler, Daniel C.	TOA am 09:10
Leymarie, Nancy	WOD am 08:30	Li, Rong'an	TP 244	Liederer, Bianca	TP 253
Leymarie, Nancy	MP 484	Li, Sam	ThP 226	Lienemann, Charles-Philippe	TP 299
Leymarie, Nancy	ThP 660	Li, Sheng	TP 503	Lienemann, Charles-Philippe	TP 298
Leymarie, Nancy M.	TP 653	Li, Sheng	MOB pm 2:50	Liebold, Lars	WP 537
Li, Anyin	TP 019	Li, Sheng	MOB am 08:30	Lietz, Christopher	MP 009
Li, Bensheng	MP 668	Li, Sheng	WP 566	Lietz, Christopher	ThP 545
Li, Bensheng	WP 459	Li, Siwei	MP 300	Lietz, Christopher	MP 064
Li, Bilan	MP 255	Li, Ting	TP 640	Lietz, Christopher B.	MP 265
Li, Bin	WP 427	Li, Tong	WP 566	Lieu, Tam	WP 202
Li, Chao	TP 191	Li, Tuo	MP 621	Lifton, Richard	TP 535
Li, Chen	WP 569	Li, Wenkui	TP 237	Light, Yooli	TP 489
Li, Chenchen	TP 079	Li, Wenyang	WP 241	Ligtvoet, Gerard	TP 595
Li, Chunzheng	MP 390	Li, Wenzhou	MOC am 08:50	Liguori, Michael J.	ThP 624
Li, Fangbiao	TOF pm 4:10	Li, Wenzhou	WP 578	Lila, Mary Ann	ThP 334
Li, Feng	MP 424	Li, Wenzhou	WP 002	Lill, Jennie	ThP 498
Li, Feng	MP 551	Li, Xiaochuan	MP 183	Lill, Jennie	MP 571
Li, Fenjie	ThP 581	Li, Xiaochuan	WP 098	Lilley, Kathryn S.	Special 002
Li, Fred	ThP 319	Li, Xiaochuan	ThP 318	Lilly, Michael	ThP 514
Li, Fu-An	ThP 515	Li, Xiaolin	TP 705	Lim, Hee-Joung	WP 630
Li, Fumin	TOF am 09:30	Li, Xiaolin	ThP 695	Lim, Heng-Keang	WP 281

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Lim, Jae-Min.....	TP 526	Lindsay, John.....	TP 589	Liu, Miao.....	TP 710
Lim, Jessica.....	WP 451	Lindsey Rose, Kristie.....	WP 462	Liu, Min.....	TP 109
Lim, Jihyeon.....	TP 587	Lindsey Rose, Kristie.....	MP 217	Liu, Pang-Yi.....	MP 492
Lim, Mi Hee.....	WOB pm 3:30	Lineberger, W. Carl.....	ThOB am 08:50	Liu, Pengyuan.....	WOC pm 3:30
Limbach, Patrick A.....	MP 617	Linehan, Stefan T.....	ThOE am 09:30	Liu, Peter.....	MP 571
Limbach, Patrick A.....	MP 300	Ling, Gee Siang.....	TP 357	Liu, Peter.....	WP 619
Limbach, Patrick A.....	MP 294	Ling, John.....	WP 139	Liu, Qian.....	MP 562
Limbach, Patrick A.....	WP 177	Ling, John.....	ThP 176	Liu, Qian.....	MP 476
Limbach, Patrick A.....	ThOD pm 3:50	Ling, Rong.....	WOF am 08:30	Liu, Qiang.....	WP 284
Limbach, Patrick A.....	MP 306	Lingam, Balasubramaniam.....	MP 425	Liu, Qin.....	MP 390
Limbach, Patrick A.....	ThOE pm 3:30	Linhardt, Robert J.....	TP 175	Liu, Rachel N.....	TP 038
Lin, Aaron E.....	WP 699	Linhardt, Robert J.....	TP 184	Liu, Shuying.....	TP 038
Lin, Aaron E.....	MP 620	Linhardt, Robert J.....	WOD pm 2:30	Liu, Shuying.....	TP 164
Lin, Cheng.....	ThP 477	Linington, Roger.....	TP 041	Liu, Siqi.....	TP 563
Lin, Cheng.....	ThOE pm 3:10	Link, Sebastian.....	MP 523	Liu, Suli.....	TP 115
Lin, Cheng.....	WP 014	Linscheid, Michael W.....	MP 602	Liu, Tao.....	TP 673
Lin, Cheng.....	ThP 495	Lioe, Hadi.....	TP 505	Liu, Tian.....	WOG pm 2:30
Lin, Chenwei.....	ThP 684	Liotta, Lance.....	WP 602	Liu, Ting.....	TP 370
Lin, Chenwei.....	WP 507	Lipchik, Andrew.....	MP 611	Liu, Tong.....	TP 503
Lin, Chenwei.....	WP 390	Lippincott-Schwartz, Jennifer.....	TP 634	Liu, Tong.....	MOB pm 2:50
Lin, Chenwei.....	WP 512	Lipton, Mary.....	MP 463	Liu, Tun.....	TP 112
Lin, Chenwei.....	MP 679	Lisa, Miroslav.....	ThP 294	Liu, Tun.....	ThOF am 09:10
Lin, Chenwei.....	MP 656	Lisacek, Frédérique.....	ThP 390	Liu, Wei-Ting.....	ThP 330
Lin, Chia-Ying.....	TP 324	Lisi, Peter.....	TP 127	Liu, Wei-Ting.....	MP 492
Lin, Chih-Yu.....	WP 387	Litherland, Albert E.....	MP 401	Liu, Wei-Ting.....	MP 498
Lin, Chih-Yu.....	ThP 577	Litsakos-Cheung, Christina.....	MP 674	Liu, Xiaohong.....	WP 286
Lin, Chih-Yu.....	MP 496	Little, James L.....	WP 361	Liu, Xiaohong.....	WP 272
Lin, Chun-Cheng.....	TP 264	Liu, Bin.....	ThP 542	Liu, Xiaohua.....	TP 009
Lin, Chun-Cheng.....	ThP 686	Liu, Chao.....	WP 073	Liu, Xiaojing.....	WOC am 09:10
Lin, Chun-Cheng.....	ThP 631	Liu, Chao.....	WP 404	Liu, Xiaoli.....	WP 263
Lin, Chun-yu.....	TP 310	Liu, Chao.....	ThOA am 09:10	Liu, Xiaoli.....	TP 244
Lin, Han-Jia.....	MP 496	Liu, Charles C.....	TP 038	Liu, Xiaowen.....	MP 441
Lin, Hsiaoju.....	WP 253	Liu, Cheng Bin.....	ThP 271	Liu, Xiaowen.....	ThP 405
Lin, Jin-Zhong.....	TOD am 09:10	Liu, Chenglin.....	WP 626	Liu, Xiaoxin.....	MP 214
Lin, Joe Zhaozheng.....	MOG pm 3:50	Liu, Cindy.....	TP 600	Liu, Xiaoyun.....	MP 530
Lin, Kedan.....	ThP 658	Liu, Cynthia.....	MP 376	Liu, Xingrong.....	TP 253
Lin, Laura.....	TP 110	Liu, David Q.....	ThP 180	Liu, Yan-Hui.....	TP 694
Lin, Melanie.....	TP 104	Liu, Dengfeng.....	TP 111	Liu, Yansheng.....	WP 242
Lin, Nai-Ti.....	TP 330	Liu, Denny.....	MP 166	Liu, Yansheng.....	TP 279
Lin, Pei-Yi.....	WP 473	Liu, Fan.....	WP 579	Liu, Yansheng.....	ThP 183
Lin, Qishan.....	TP 625	Liu, Guiming.....	ThP 695	Liu, Yanwei.....	MP 018
Lin, Shanhua.....	MOG am 08:50	Liu, Guomin.....	ThP 406	Liu, Yanwei.....	ThP 445
Lin, Shanhua.....	MOG pm 4:10	Liu, Guomin.....	MP 610	Liu, Yaoming.....	ThP 433
Lin, Song.....	WP 283	Liu, Guowen.....	ThP 321	Liu, Yashu.....	TP 507
Lin, Tao.....	ThP 455	Liu, Guowen.....	TOF am 09:10	Liu, Yashu.....	MP 672
Lin, Tzu-yung.....	TP 561	Liu, Haichuan.....	TP 570	Liu, Yashu.....	MP 663
Lin, Tzu-Yung.....	ThP 070	Liu, Haichuan.....	WP 608	Liu, Yashu.....	MP 661
Lin, Weisheng.....	WP 254	Liu, Hua-Fen.....	WP 268	Liu, Yashu.....	ThP 672
Lin, Weisheng.....	WP 667	Liu, Hua-Fen.....	TP 328	Liu, Yichin.....	ThP 656
Lin, Wen-Peng.....	TP 311	Liu, Hua-Fen.....	TP 327	Liu, Yifei.....	MP 172
Lin, Xiaoxia.....	TP 541	Liu, Hui.....	ThP 581	Liu, Ying.....	TOC pm 2:50
Lin, Yen-Yi.....	TP 378	Liu, Huiling.....	MP 570	Liu, Yingying.....	TP 254
Lin, Yi.....	MP 413	Liu, Huwei.....	ThP 129	Liu, Yu-Ching.....	MP 549
Lin, Yu-Chin.....	MP 492	Liu, Huwei.....	TP 037	Liu, Zhenke.....	TP 708
Lin, Yu-Shan.....	ThP 365	Liu, Jenna-Jiangjiang.....	ThP 550	Liu, Zhenke.....	TP 697
Lin, Zhaozheng.....	WP 663	Liu, Jia.....	TP 023	Liu, Zhi.....	WP 251
Lin, Zhen Yuan.....	WP 707	Liu, Jian.....	TP 683	Liuni, Peter.....	ThP 543
Lin, Zhen Yuan.....	ThP 406	Liu, Jian.....	WP 508	Livi, Valeria.....	WP 237
Lin, Zhenxin.....	TP 525	Liu, Jian.....	MP 670	Liyanage, Rohana.....	ThP 440
Lin, Zhongping (John).....	ThP 115	Liu, Jian.....	ThP 610	Ljungqvist, Anders.....	WP 097
Lin, Zhongping (John).....	WP 254	Liu, Jian.....	WP 394	Llewellyn, Don.....	ThP 299
Lin, Zhongping (John).....	WP 251	Liu, Jian.....	MP 686	Lloyd, David K.....	MP 168
Lin, Zhongping (John).....	WP 667	Liu, Jiangjiang.....	TP 035	Lloyd, Steven.....	ThP 326
Lin, Zhongping (John).....	WP 253	Liu, JiangJiang.....	WP 533	Lloyd, Thomas.....	ThP 205
Lin, Ziqing.....	TP 034	Liu, Jie.....	WP 302	Lloyd Raven, Emma.....	ThP 559
Lindahl, Anna.....	WP 304	Liu, Jun.....	MP 211	Lo, Fiona F. K.....	WP 325
Lindell, Cristal.....	TOB am 08:30	Liu, Junmei.....	WP 657	Lo, Seydina.....	WP 059
Lindemans, Jan.....	ThP 650	Liu, Lan.....	WP 054	Lobinski, Ryszard.....	TP 294
Linden, H. Bernhard.....	TP 056	Liu, Lijun.....	TP 532	Lobinski, Ryszard.....	TP 287
Lindinger, Christian.....	ThP 049	Liu, Limin.....	WP 476	Loboda, Alexander.....	MP 596
Lindner, Herbert.....	TP 429	Liu, Lingyan.....	WP 216	Lobodin, Vladislav.....	ThP 352
Lindner, Herbert H.....	ThP 488	Liu, Luna.....	ThP 658	Lobodin, Vladislav V.....	TP 290
Lindner, Herbert H.....	TP 063	Liu, Margaret.....	ThP 657	Lobodin, Vladislav V.....	ThP 342
Lindner, Herbert H.....	TP 539	Liu, Miao.....	ThP 396	Locasale, Jason.....	MP 330
Lindner, Kathrin.....	ThP 663	Liu, Miao.....	TP 381	Lock, Chris.....	MP 051
Lindner, Wolfgang.....	WP 335	Liu, Miao.....	ThP 692	Lock, Stephen J.....	TP 363
Lindon, John.....	ThP 428	Liu, Miao.....	MOA pm 3:50	Lock, Stephen J.....	MP 415

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Lock, Stephen J.	TP 362	Low, Teck Yew	WOA pm 2:50	Luo, Yan	ThP 613
Lodder, Helen	ThP 121	Lowenthal, Mark	WP 291	Luther, J. Matthew	TP 676
Lodder, Helen	ThP 122	Lowenthal, Mark S.	ThP 649	Lutisan, Juraj	ThOA am 10:10
Loderstedt, James	TP 607	Lowes, Stephen	MOG pm 2:30	Lutzke, Barry	MP 189
Loeffler, Frank	MP 214	Lowes, Steve	WP 151	Luxon, Bruce	TP 605
Loetterle, Rebekka	MP 408	Lozanski, Gerard	WP 594	Luyten, Walter	TP 466
Loetterle, Rebekka	TP 099	Lu, Bingwen	MP 461	Ly, Mellisa	TP 184
Loftus, Neil	ThP 111	Lu, Chen	MP 662	Ly, Mellisa	TP 175
Loftus, Neil	WP 269	Lu, Fachuang	TP 192	Ly, Mellisa	WOD pm 2:30
Loftus, Neil J	WP 666	Lu, Jang-Jih	MP 549	Ly, Tony	MP 243
Logan, Susan	MP 538	Lu, Jie	ThP 342	Ly, Tony	TOC pm 3:10
Logie, Jennifer	WP 343	Lu, Liang	WP 625	Ly, Tony	ThOB pm 3:30
Lohnes, Karen	TP 554	Lu, Mei	ThP 548	Ly, Tony	ThP 450
Lohstroh, Peter	ThP 164	Lu, Qiaozhen	ThP 627	Ly, Tony	TP 704
Lok, David	MP 691	Lu, Qiaozhen	TP 115	Ly, Tony	ThOB pm 2:50
Lomeli, Shirley	TP 006	Lu, W. Douglas	MOB pm 2:50	Lyashkov, Alexey	TP 626
Londry, Frank A.	ThP 053	Lu, Wenzhe	WP 251	Lyness, Eric I.	ThP 074
Long, Stephen	WP 290	Lu, Xiaoning	WP 102	Lyubarskaya, Yelena	WOD am 10:10
Long, Yaoling	ThP 236	Lu, Yanyan	TP 597	Lytvinskiy, Yaroslav	MOA pm 2:50
Long, Ying	WP 623	Lu, Ying-Wei	ThP 686	Lytvinskiy, Yaroslav	WP 398
Longo, Ken	TP 703	Lu, Yuchen	TP 628	Ma, Baiping	WP 108
Longree, Philipp	MP 385	Lu, Zhenqiang	WP 657	Ma, Bin	MP 457
Longuespée, Rémi	ThP 425	Luan, Shen	TP 664	Ma, Bin	MP 462
Lonie, Elisabeth	MOG am 09:30	Luan, Shen	TP 663	Ma, Bin	MP 437
Loo, Joseph A.	ThOC pm 2:50	Lubman, David	TP 525	Ma, Bin	TP 441
Loo, Joseph A.	MP 632	Lubman, David M.	MP 672	Ma, Bin	MP 428
Loo, Joseph A.	MP 534	Lubman, David M.	MP 663	Ma, Di	ThP 680
Loo, Joseph A.	TP 006	Lubman, David M.	MP 661	Ma, Hong	TP 529
Loo, Joseph A.	MP 561	Lubman, David M.	ThP 672	Ma, Jun	TOB am 10:10
Loo, Joseph A.	TOD pm 2:50	Lubman, David M.	TP 507	Ma, Kyungna	TP 360
Loo, Joseph A.	WP 539	Lubman, David M.	WP 367	Ma, L.	ThP 219
Loo, Joseph A.	TP 007	Lucas, Joseph E.	WP 601	Ma, Le	TP 370
Loo, Joseph A.	WP 396	Lucas, William J.	TP 532	Ma, Li	ThP 198
Loo, Joseph A.	MP 537	Lucio, Marianna	ThP 256	Ma, Mingming	MP 125
Loo, Lai Chin	TP 357	Lucke, Richard B.	TP 296	Ma, Qi	WP 703
Loo, Lai Chin	MP 072	Ludwig, Christina	WP 515	Ma, Xiaoxi	MP 390
Loo, Rachel O.	ThOC pm 2:50	Ludwig, Christina	WP 525	Ma, Xiaoxiao	WP 008
Loo, Rachel O.	TP 006	Ludwig, Katrin	ThP 659	Ma, Xiaoxiao	WP 480
Loo, Rachel O.	MP 537	Ludwig-Kubinski, Amy	WP 709	Ma, Xuepo	WP 403
Loo, Rachel O.	MP 534	Luebbert, Christine	ThP 430	Ma, Xuepo	ThP 090
Loo, Rachel O.	WP 382	Luft, Benjamin	MP 550	Ma, Yi-Chun	ThP 577
Loo, Rachel O.	TP 007	Luft, Olga	MP 202	Ma, Yinfa	TOB am 09:30
Loos, Martin	MP 385	Luh, Tien-Yau	TP 330	Ma, Ying	ThP 588
Lootsma, Wayne	WOF am 08:50	Lührmann, Reinhard	ThOD pm 2:30	Maas, Jeff	ThP 073
Lootsma, Wayne	ThP 213	Lui, Ed	TP 219	Maass, David	MP 194
Lopes, Norberto P.	TOB am 09:50	Lui, Ed	WP 344	Macagno, Eduardo	MOD pm 3:10
Lopez, Mary F.	WP 602	Lui, Edmund	WP 221	Macagno, Eduardo	TP 407
Lopez, Mary F.	TP 103	Luider, Theo	ThP 650	MacAleese, Luke	WP 446
Lopez, Nathan	MP 622	Luider, Theo	TP 595	Maccarrone, Giuseppina	ThOA pm 2:50
Lopez-Ferrer, Daniel	ThP 691	Luider, Theo M.	MP 681	Maccoss, Michael	WP 080
López-Ferrer, Daniel	ThP 211	Luider, Theo M.	TP 592	Maccoss, Michael J.	WP 600
López-Ferrer, Daniel	TP 160	Luider, Theo M.	TP 667	Maccoss, Michael J.	TOA pm 3:30
Lopez-Rosas, Aurora	ThP 292	Luider, Theo Marten	MP 594	MacCoss, Michael J.	MP 438
Loppacher, Matthias	ThP 109	Luk, Chiuwa Emily	TP 089	Maccoss, Michael J.	WP 518
Loppacher, Matthias	ThP 208	Luk, Chiuwa Emily	MOF pm 3:50	Maccoss, Michael J.	WP 046
Lord, Heather	WOF am 09:30	Luk, Chiuwa Emily	MOF pm 3:30	Maccoss, Michael J.	TOA pm 2:50
Lord, Richard	ThOB am 09:10	Lukas, Thomas J.	WP 688	Maccoss, Michael J.	ThP 397
Lorent, Urzula	TP 245	Lukashev, Dmitriy	TP 708	MacCoss, Michael J.	TP 670
Lorentzen, Travis	MP 656	Luke, Amy	TOB pm 3:50	Maccoss, Michael J.	TOG pm 2:30
Lorentzen, Travis	WP 507	Lumley, Lucille	TP 308	MacCoss, Michael J.	TOE pm 3:50
Lorentzen, Travis	MP 679	Luna, Maria	TP 141	Macdonald, Matthew L.	TP 603
Lorenz, Matthias	TP 068	Luna, Marsha	TP 279	Macdonald, Timothy L.	TP 218
Lorenz, Matthias	TP 067	Lundby, Alicia	TP 582	MacDonald, Tobey J.	MP 669
Lorenz, Peter	ThP 652	Lundgren, Magnus	TP 156	Macek, Boris	MP 616
Lorenz, Peter	WP 596	Lundin, Göran	MP 022	Macek, Boris	MP 514
Loriga, Giovanni	ThP 179	Lundin, Göran	MP 023	MacFarlane, Ronald D.	WP 656
Lorkiewicz, Pawel	MP 316	Lundin, Ulrika	MP 329	Machavaram Siva, Pratap Reddy	WP 624
Lortie, Mark	TP 439	Lundin, Ulrika	MP 328	Macher, Bruce	MP 674
Louarn, Essyllt	MP 382	Lunney, Dave	MP 108	Macherone, Anthony	WP 316
Loughmiller-Newman, Jennifer	MP 115	Lunsford, Kyle	ThP 441	Macherone, Anthony	TP 368
Lovari, Robert	MP 551	Luo, Haitao	WP 235	Macherone, Anthony	MP 369
Love, Chasity B.	ThP 053	Luo, Jinqun	TP 485	Macherone, Anthony	MP 364
Love, Craig	MP 091	Luo, Qilie	TP 119	Macherone, Anthony	WP 329
Love, Craig	ThP 475	Luo, Quanzhou	WP 521	Macht, Marcus	MP 566
Löve, Arndis Sue-Ching	WP 687	Luo, Shu-Kun	TOD am 09:10	Macht, Marcus	WP 629
Lovestone, Simon	TP 686	Luo, Shun	WP 521	Machuron-Mandard, Xavier	WP 125
Lovestone, Simon	TP 675	Luo, Xiao	ThOD pm 2:30	Machuron-Mandard, Xavier	MP 400

INDEX OF AUTHORS

MacIsaac, Susan	ThP 302	Majdi, Ellie	WP 168	Manning, Gwen	TP 660
MacIsaac, Susan	ThP 301	Major, Hilary J.	WP 317	Mannion, John	TOG pm 3:10
Mackay, C. Logan	TP 562	Major, Mohamed	WP 039	Mano, Nariyasu	MP 173
Mackay, C. Logan	WP 351	Major, Yannis	TP 013	Manousidou, Theodora	TP 462
Mackay, C. Logan	TP 559	Majoros, Tamas	ThP 045	Manteca, Angel	MP 600
Mackay, C. Logan	ThP 458	Makarov, Alexander	ThP 081	Mantz, Hubert	TP 421
Mackay, C. Logan	ThP 434	Makarov, Alexander	WP 082	Mantz, Hubert	ThP 078
Mackay, Logan	MP 442	Makarov, Alexander	MP 103	Manura, John	ThP 018
MacKeigan, Jeffrey	MP 686	Makarov, Alexander	MP 092	Mao, Bing	WP 182
Mackie, Ken	MP 016	Makarov, Alexander	MP 107	Mao, Yang	MP 280
Mackie, Ken	MP 014	Makarov, Alexander	MP 557	Mao, Yuan	TP 305
Mackie, Ken	MP 265	Makarov, Alexander	MP 560	Marasco, Christina	TP 147
Maclean, Brendan	ThP 397	Makarov, Alexander	MP 093	Marchal, Cathie	WP 062
Maclean, Brendan	WP 600	Makarov, Alexander	WOB am 08:30	Marchetti-Deschmann, Martina	ThP 435
Maclean, Brendan	TOA am 10:10	Makarov, Alexander	WP 090	Marcou, Christel	WP 079
MacMillan, Denise	WP 318	Makarov, Alexander	WOF pm 2:30	Marcou, Christel	WOF am 10:10
Macnaughtan, Megan	ThP 539	Makeev, Evgeny	ThP 086	Marcoux, Marie-Josée	ThP 469
Macnaughtan, Megan	MP 645	Maker, Garth	WP 232	Marcus, Sean R.	MOB pm 4:10
Macrides, Theodore	ThP 284	Maker, Garth L.	ThP 225	Marcus, Jacob	TP 524
Madden, Benjamin J.	TP 650	Maki, Shojiro	TP 182	Marek, Rachel	MP 369
Maddock, Janine	WOA am 09:10	Maksimova, Yelena	TP 568	Marginean, Ioan	WOF am 08:50
Madeira, Marlene F.	WP 154	Makusky, Anthony	TP 634	Maria, Sarah	TP 392
Madela, Karolina	WP 279	Makusky, Anthony J.	MP 612	Mariani, Michael	ThP 309
Madico, Guillermo	MP 282	Makusky, Anthony J.	WP 372	Marimuthu, Arivusudar	TP 635
Madmon, Moran	MP 397	Makusky, Anthony J.	WP 598	Marini, Joseph T.	WP 272
Madsen, Christian Toft	WP 698	Malamud, Daniel	TP 642	Marini, Joseph T.	WP 286
Madsen, James	ThP 451	Malats, Núria	MP 683	Marino, Karina	ThP 564
Madsen, James	WOF pm 2:50	Mallard, W. Gary	WP 291	Märk, Tilmann D.	ThP 051
Madsen, James	MP 234	Mallard, W. Gary	WP 289	Märk, Tilmann D.	WP 019
Maeda, Sumihiro	ThP 459	Mallia, Krishna	MP 213	Märk, Tilmann D.	WP 066
Maeda-Yamamoto, Mari	WP 215	Malmstroem, Johan	ThOC pm 3:30	Märk, Tilmann D.	WP 338
Maedler, Stefanie	ThP 155	Malmstroem, Johan	WP 505	Märk, Tilmann D.	ThP 028
Maedler, Stefanie	WP 567	Malmström, Anders	WOD pm 2:50	Markell, James	WP 635
Maekawa, Masamitsu	MP 173	Malone, Peter	WP 435	Markey, Sanford	TP 634
Maeng, Heysun	ThP 415	Maloney, Jennifer	ThP 186	Markey, Sanford P.	MP 612
Maerk, Lukas	ThP 049	Malorni, Livia	MP 671	Markey, Sanford P.	WP 598
Maerk, Tilmann D.	ThP 049	Malovannaya, Anna	WP 522	Markey, Sanford P.	WP 372
Maeser, Stefan	TOF am 08:30	Malovannaya, Anna	MOA am 08:50	Markouts, Stavroula	ThP 153
Magera, Mark J.	MP 347	Maltman, Daniel	MP 506	Marko-Varga, Gyorgy	TOF pm 3:10
Magnes, Christoph	WP 149	Man, Che Nin Binti	WP 650	Marquardt, Andreas	MP 414
Magnes, Christoph	WP 277	Man, Petr	ThP 561	Marquez, Melissa	ThP 098
Magni, Fulvio	TP 649	Man, Petr	TP 476	Marr, Julie	MP 354
Maguire, Michael	TP 558	Man, Petr	MP 606	Marr, Julie	MP 355
Magyar, Rachelle	TP 479	Man, Petr	TP 572	Marron, Sara	TP 513
Mahadevan, Anita	ThP 696	Manadas, Bruno	TP 172	Marrow, Glenn	ThP 284
Mahadevan, Anita	ThP 697	Manadas, Bruno	WP 257	Marschalek, Rolf	ThP 153
Mahaffy, Paul	ThP 074	Mandal, Mridul Kanti	TP 054	Marsh, Joshua	WP 086
Mahaffy, Paul	ThP 027	Mandal, Mridul Kanti	TP 064	Marshall, Alan G.	ThP 354
Mahaffy, Paul	MP 067	Mandal, Mridul Kanti	TP 061	Marshall, Alan G.	WP 081
Mahan, Andy	TP 599	Mandel, Friedrich	WP 222	Marshall, Alan G.	MP 013
Maharudraiah, Jagadeesha	ThP 696	Manduzio, Helene	MP 297	Marshall, Alan G.	TP 304
Maharudraiah, Jagadeesha	TP 622	Mangerich, Aswin	WP 676	Marshall, Alan G.	MP 558
Mahawar, Manish	ThP 537	Mangos, Maria	MP 529	Marshall, Alan G.	WP 037
Maheux, Maxim	TP 249	Mangrum, John B.	WP 187	Marshall, Alan G.	TP 496
Mahmoud, Samantha	WP 282	Mangrum, John B.	TOE am 10:10	Marshall, Alan G.	TP 290
Mahon, David	ThOF am 09:10	Mani, D. R.	TOA am 10:10	Marshall, Alan G.	MP 287
Mahony, Catherine	WP 355	Mani, D. R.	TP 688	Marshall, Alan G.	MP 102
Mahrouche, Louiza	ThP 499	Mani, D. R.	TP 645	Marshall, Alan G.	MP 088
Mahrouche, Louiza	MOA pm 3:30	Maniatis, Stephanie	WP 576	Marshall, Alan G.	ThP 352
Mahsut, Ablatt	WP 665	Maniatis, Stephanie	WP 644	Marshall, Alan G.	ThP 342
Mai, Fu-Der	MP 684	Maniatis, Stephanie	TP 465	Marshall, Alan G.	TOB pm 3:30
Maiciera, Sofia	WP 700	Manicke, Nicholas	WOF am 09:10	Marshall, Alan G.	ThP 338
Maier, Christopher	MP 205	Manicke, Nicholas	TOF am 09:50	Marshall, Alan G.	MP 086
Maier, Claudia	ThP 598	Manicke, Nicholas	MP 047	Marshall, Alan G.	TP 475
Maier, Claudia	ThP 327	Manicke, Nicholas	MP 048	Marshall, Alan G.	TP 305
Maier, Claudia	ThP 219	Manicke, Nicholas	MP 046	Marshall, Alan G.	MOE am 09:10
Maier, Claudia	ThP 673	Manier, M. Lisa	WP 447	Marshall, Alan G.	MP 087
Maier, Claudia	TP 491	Mankidy, Rishikesh	ThP 149	Marshall, Darrell D.	MP 597
Maier, Claudia	TP 598	Manly, Cory	MP 064	Marshall, David L.	MP 129
Maier, Norbert M.	WP 335	Mann, Carl	TP 432	Marshall, Jonathan	ThP 105
Maier, Robert J.	ThP 537	Mann, Kenneth G.	MP 229	Marshall, Matthew	ThOC pm 3:10
Maier, Thomas	MP 388	Mann, Matthias	TP 706	Marshall, Peter	WP 412
Main, Laura	ThP 646	Mann, Matthias	WP 082	Marshall-Waggett, Carla	MP 221
Maitra, Dhiman	TP 199	Mann, Matthias	ThP 626	Marteau, Charlotte	WP 072
Maitre, Philippe	MOC am 08:30	Mann, Matthias	MOA pm 4:10	Martellet, Armelle	MP 297
Maiuolo, Loredana	ThP 317	Mann, Matthias	WP 700	Martens, Lennart	MP 460
Majdi, Ellie	ThP 361	Mann, Matthias	TP 641	Martens, Lennart	MP 431

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Marth, Jamey D	MP 278	Matsuura, Masaaki	WP 167	Mccomb, Mark E	ThP 388
Martin, Brian	WP 598	Matsuura, Shigeki	ThP 068	Mccomb, Mark E	ThP 607
Martin, Bronwen	WP 658	Matsuura, Shuji	TP 692	Mccomb, Mark E	TP 653
Martin, Bronwen	ThP 675	Matsuya, Miyuki	ThP 062	Mccomb, Mark E	TP 443
Martin, Flavius	MP 195	Matta, Ajay	MP 688	McCormick, Robert	ThP 348
Martin, Helen	ThP 037	Matthew, Brian	TP 583	McCoustera, Martin R. S.	MP 113
Martin, John	ThP 119	Matthew, Reichert	TOB pm 3:50	Mccullough, Bryan	WOB am 08:50
Martin, Pascal	TP 374	Matthew, Susan	TOC am 10:10	Mccullough, Sandra	WP 664
Martin, Roy	WP 400	Matthews, Dwight E.	MP 229	Mcdonald, Jeff	ThP 279
Martinez, Lynette	TOG pm 3:10	Matthews, Heather	MP 550	McDonald, Karin R.	ThP 530
Martinez Jr., Oscar	WP 023	Mattick, Jacqueline	ThP 617	McDonald, Stephen	MOF am 09:50
Martino, Paul	MP 650	Matunis, Michael	ThP 503	McDonald, Stephen	ThP 288
Martino, Paul	MP 646	Matus, Isaac	WP 709	Mcdonald, Stephen	TP 224
Martino, Paul	MP 648	Matzke, Melissa M.	ThP 255	McDonald, Stephen	WP 286
Martino, Paul	MP 649	Mauclair, Gérard	ThP 071	Mcdonald, Stephen	TP 225
Martino, Paul	MP 651	Maudsley, Stuart	WP 658	McDonald, Thomas	WP 663
Martino, Paul	MP 647	Maull, John	MP 174	Mcdonald, W. Hayes	MP 431
Martinsen, Morten	ThP 355	Mauri, Giancarlo	TP 649	McDonald, W. Hayes	TP 566
Martinsen, Morten	ThP 356	Maurice, Helene	ThP 196	McDonald, Zac	ThP 662
Martone, Naudia	WP 043	Mautner, Anton	WP 149	Mcdonnell, Liam	ThP 425
Marur, Vasant	TOC am 09:10	Mavrinskaya, Natalia	TP 262	Mcdonnell, Liam	TP 413
Marur, Vasant	ThP 286	Mavroudis, Panagiotis	WP 069	Mcdonnell, Liam	ThP 444
Marushchak, Tatyana	MP 342	Mawhinney, Thomas P.	MP 075	McDonnell, Liam A.	WP 436
Marx, Marilyn	MP 553	Maxon, Morgan	ThP 586	McDonough, Wendy	MP 670
Masahiko, Sato	TP 481	May, Damon	ThP 677	McEwen, Charles	WP 202
Masaki, Shunpei	WP 179	May, Eliel	TP 519	McEwen, Charles N.	ThOG pm 3:50
Mascini, Nadine	WP 410	May, Jody	ThP 044	McEwen, Charles N.	WOB am 09:50
Mascuch, Samantha	WP 421	May, Jody	TP 147	McEwen, Charles N.	ThP 437
Mason, D. Randal	WP 597	Mayboroda, Oleg A.	WP 292	McEwen, Charles N.	TP 065
Mason, Ronald	ThP 532	Mayboroda, Oleg A.	TOG pm 4:10	McEwen, Charles N.	MP 015
Masri, Abdoul Monem	MP 382	Mayer, Katharina	MP 423	McFarland, Melinda A.	WP 570
Masse, Craig	TP 233	Mayer, Maren	MP 658	McFarland, Melinda A.	MP 564
Masselon, Christophe	TP 055	Mayer, Paul Michael	WP 057	McFarlane, John	WP 258
Masselon, Christophe	WOB am 08:30	Mayer, Paul Michael	WP 058	McGibbon, Graham A.	WOF pm 4:10
Masselon, Christophe	MP 203	Mayer, Paul Michael	WP 013	McGibson, Graham A.	TP 197
Masselon, Christophe	MP 250	Mayer-Posner, Franz	MP 407	McGinley, Christopher	WP 119
Masselon, Christophe D.	MP 683	Mayers, Jonathan J.S.	WOB pm 3:30	Mcginley, Michael	TP 122
Masselot, Alexandre	WP 364	Mayhew, Christopher A.	ThP 049	Mcginley, Michael	MP 296
Massire, Christian	MP 551	Maylin, George	WP 099	McGinnis, A. Cary	WP 184
Master, Stephen	TP 594	Maynard, Bud	WOG pm 3:30	McGowan, Thomas	TP 398
Masteron, Joanne	WP 603	Maynard, John	MOF am 10:10	McGowan, Thomas	TP 548
Mastrocola, Raffaella	MP 660	Mazdeyasni, Hormoz	ThP 185	McGowan, Thomas	MP 448
Masucci, John A.	TP 599	Mazur, Dmitry	TOB pm 3:10	McGowan, Thomas	TP 379
Masuda, Katsuyoshi	TP 418	Mazur, Matthew	ThOF am 09:10	McGown, Linda	ThP 617
Masuda, Katsuyoshi	TP 417	Mazur, Matthew	TP 112	McGuffin, Liam J.	ThP 300
Masuda, Takeshi	TP 536	Mazzafera, Paulo	ThP 322	McGuigan, Christopher	WP 279
Masujima, Tsutomu	ThP 243	Mazzeo, Jeff	ThP 637	McGuire, Jeffrey M.	TP 307
Masujima, Tsutomu	WP 121	Mazzotti, Fabio	WP 133	Mchale, Kevin J.	MP 381
Masujima, Tsutomu	MP 318	Mazzotti, Fabio	ThP 317	Mcilwain, Sean	TOA pm 3:30
Masujima, Tsutomu	TP 011	Mazzucchelli, Gabriel	MP 574	Mcilwain, Sean	WP 573
Masujima, Tsutomu	WP 285	Mazzucchelli, Gabriel D.	MP 569	Mcinerney, Michael	ThOC pm 2:50
Masujima, Tsutomu	WP 295	Mazzuchini, Flaubert	ThP 334	McIntosh, Martin	ThP 677
Masujima, Tsutomu	WP 296	McAlister, Graeme	WP 015	Mcintyre, Doug	WP 209
Masur, Stefan	ThP 184	Mcalister, Graeme	ThOB pm 4:10	McKay, Matt	ThP 694
Mathai, George	WP 049	Mcalister, Graeme	ThP 050	McKay, Matthew	ThP 609
Mathai, George	WP 050	Mcalister, Graeme	ThOE am 08:50	McKay, Matthew	WP 660
Matheka, David	MP 691	Mcalister, Graeme C.	MP 572	Mckee, Christopher	WP 705
Matheny, Perry	ThP 178	Mcalister, Graeme C.	TOE pm 3:10	McKeen, Stuart A.	MP 109
Mather, Joanne	ThP 112	Mcallister, Fiona E.	WP 613	McKeith, Holly	ThP 202
Mather, Joanne	MP 163	Mcallister, Fiona E.	ThOA pm 4:10	Mckenna, Amy	TP 305
Mather, Joanne	TP 243	Mcalpin, Casey	MP 011	Mckenna, Amy	ThP 352
Mather, Joanne	ThP 107	McArthur, Justin	ThP 603	Mckenna, Amy	ThP 354
Matheron, Lucrece	MP 478	McAvoy, Thomas	TP 693	Mckenna, Amy	MP 013
Mathews, Michael	TOA pm 3:30	McBrien, Mike	WOF pm 4:10	Mckenna, Amy M.	TOB pm 3:30
Mathewson, Travis	ThP 202	McCann, Kevin	ThP 166	McKenna, Amy M.	ThP 338
Mathur, Raman	ThP 025	McCann, Kevin	ThP 165	McKenna, Amy M.	MOE am 09:10
Mato, José M	ThP 614	McCann, Susan	WP 129	Mckenna, Thérèse	ThP 593
Matson, Samantha	ThOA pm 3:30	McCardle, James	TP 519	Mckenna, Thérèse	ThP 590
Matson, Wayne	TOC am 09:10	McCarthy, Jason	TP 647	Mckenzie, Christine J.	WP 056
Matson, Wayne R.	ThOA pm 3:30	McCarthy, Jeanette	WP 601	McKenzie, David	WP 336
Matsubara, Atsuki	ThP 283	McCarthy M.D., James	WP 200	Mckenzie, Donald L.	WP 272
Matsubara, Atsuki	ThP 282	Mccaskill, David	TOB am 08:50	McKenzie, Donald L.	WP 286
Matsubara, Atsuki	ThP 281	McCauley, Erin P. B.	MP 387	McKinney, Collin	ThP 030
Matsuda, Shuichi	WP 121	McClatchy, Dan	WP 697	McLafferty, Fred W.	TP 499
Matsuda, Yoko	MP 120	McClure, Tom	ThOG am 08:30	McLaughlin, Jay	WP 117
Matsuo, Yoshiki	ThP 534	Mccomb, Mark E.	MP 484	McLaughlin, Theresa	ThP 533
Matsuura, Masaaki	TP 406	Mccomb, Mark E.	ThP 660	McLaughlin, Theresa	TP 678

INDEX OF AUTHORS

McClean, John A.....	TP 147	Mendoza, Jhoana.....	MP 491	Meza, Jose E.....	TP 516
McClean, John A.....	ThP 044	Mendoza, Luis.....	ThP 409	Mi, Jianqiu.....	WP 122
McClean, John A.....	TP 143	Mendoza, Luis.....	WP 369	Miao, Long.....	ThOA am 09:10
McClean, John A.....	TP 152	Mendoza, Luis.....	ThP 386	Miao, Yunan.....	WP 566
McLoughlin, Shaun M.....	ThP 624	Mendoza, Vanessa.....	TP 180	Miao, Yunan.....	MOB am 08:30
McLuckey, Scott A.....	TOE pm 3:30	Mendrick, Donna.....	WP 229	Miao, Zhixin.....	WOC pm 3:30
McLuckey, Scott A.....	ThP 541	Meng, Da.....	WP 377	Miao, Zhixin.....	ThOG pm 3:30
McLuckey, Scott A.....	WP 582	Meng, Da.....	TP 567	Michael, Steven.....	TOF am 09:30
McLuckey, Scott A.....	WP 618	Meng, Da.....	WP 376	Michael McNeil, Michael.....	ThP 445
McLuckey, Scott A.....	WOE pm 3:50	Meng, Fanjun.....	TP 563	Michaelis, Simon.....	ThP 613
McLuckey, Scott A.....	ThP 557	Meng, Fanyu.....	WP 182	Michaelson, Erin.....	MP 629
McMahon, Brian.....	TP 141	Meng, Min.....	WP 139	Michalski, Annette.....	WP 082
McMahon, Robert.....	TP 392	Meng, Min.....	ThP 177	Michalski, Annette.....	TP 706
McMartin, Kenneth.....	TP 321	Meng, Min.....	TP 280	Michelmann, Karsten.....	ThP 360
McMillan, Donna A.....	WP 355	Meng, Min.....	TP 259	Michels, Antje.....	TP 053
McNally, Jonathan C.....	MP 603	Meng, Min.....	ThP 470	Michelsen, Klaus.....	WP 054
McNamara, Michael.....	ThP 598	Meng, Min.....	MP 162	Michon, Anne-Marie.....	ThP 616
McNees, Ruth.....	TP 152	Meng, Wei.....	WP 470	Michopoulos, Filippou.....	WP 666
McNeil, Michael.....	MP 018	Menger, Robert F.....	WP 409	Michopoulos, Vasiliki.....	ThP 182
McNulty, Nathan P.....	MP 531	Menon, Krishan.....	WP 131	Middlebrook, Ann.....	MP 109
McQuade, Leon.....	MP 288	Menon, Usha.....	WP 157	Midey, Anthony.....	WP 205
McQueen, Peter.....	TP 718	Menoni, Carmen.....	ThP 445	Miesbauer, Laura.....	WP 262
McQueen, Peter D.....	ThP 350	Menoni, Carmen.....	MP 018	Miglino, Maria Angélica.....	ThP 289
McShea, Andrew.....	WP 351	Menschaert, Gerben.....	MP 466	Mihaylova-Todorova, Svetlana.....	MP 686
McWhinnie, Elizabeth.....	MOA am 09:50	Menschaert, Gerben.....	TP 466	Mikaia, Anzor.....	MP 077
Meade, Mitchell.....	MP 393	Mentnova, Marija.....	WP 582	Mikaia, Anzor.....	WP 053
Mechref, Yehia.....	WOD pm 4:10	Merchant, Mark E.....	TP 390	Mikami, Hirohisa.....	WP 354
Mechref, Yehia.....	TP 174	Merchant, Sabeeha.....	MP 534	Miki, Shinichi.....	ThP 066
Mechref, Yehia.....	ThP 266	Mercier, Genevieve.....	ThP 655	Miki, Shinichi.....	MP 370
Mechref, Yehia.....	MP 326	Merenbloom, Samuel.....	WP 010	Miki, Shinichi.....	ThP 068
Mechref, Yehia.....	ThP 574	Meriaux, Céline.....	ThP 425	Mikiko, Kimura.....	TP 153
Mechref, Yehia.....	MP 286	Meriaux, Céline.....	MOD pm 3:10	Mikkat, Stefan.....	ThP 520
Mechref, Yehia.....	TP 522	Meriaux, Céline.....	TP 407	Mikkelsen, Oyvind.....	ThP 355
Mechtler, Karl.....	WP 702	Meriaux, Céline.....	WP 429	Mikkelsen, Oyvind.....	ThP 356
Mechtler, Karl.....	WOA pm 3:30	Merico, Daniele.....	WP 508	Miladinovic, Sasa M.....	MP 096
Mechtler, Karl.....	MOA pm 2:30	Meriin, Anatoli B.....	ThP 660	Miladinovic, Sasa M.....	MP 557
Mechtler, Karl.....	Special 002	Meropol, Dan.....	ThP 695	Miladinovic, Saša M.....	TP 101
Medana, Claudio.....	MP 660	Merrill, Karen.....	ThP 212	Milagre, Cintia DF.....	MP 380
Medendorp, Joseph.....	WOF pm 3:10	Merrick, B. Alex.....	TP 652	Milagre, Humberto MS.....	MP 380
Medrano, Juan.....	TP 506	Merrihew, Gennifer.....	MP 438	Milasinovic, Slobodan.....	ThP 433
Medzihradsky, Katalin F.....	WOD am 09:30	Merrihew, Gennifer.....	WP 046	Milburn, Michael.....	ThOF pm 2:30
Medzihradsky, Katalin F.....	TP 440	Merrihew, Gennifer.....	TOA pm 2:50	Milburn, Michael.....	ThP 237
Meehan, Michael.....	ThP 494	Merrihew, Gennifer.....	WP 600	Milburn, Michael.....	WP 681
Meeks, John C.....	MP 535	Merrill, Jr., Alfred H.....	TOC pm 2:50	Millar, Alan.....	ThP 224
Meetani, Mohammed.....	WP 504	Merrill, Jr., Alfred H.....	MP 270	Millar, Alan.....	ThP 223
Mehl, John T.....	TP 569	Merry, Catherine L. R.....	MP 279	Millar, Alan.....	WP 359
Mehlman, Tevie.....	WP 464	Mertins, Philipp.....	TOA am 08:50	Millar, Alan.....	WP 108
Mehmood, Shahid.....	TP 572	Mesaros, Clementina.....	ThOF pm 2:50	Millar, Alan.....	WP 426
Mehta, Anand.....	MP 662	Mesaros, Clementina.....	WP 686	Millar, Alan.....	TP 224
Mei, Joanne.....	WP 672	Mesaros, Clementina.....	ThP 181	Millar, Alan.....	WP 347
Meier, Lukas.....	MP 028	Mesmin, Cédric.....	TP 464	Millar, Alan.....	TP 225
Meier, Lukas.....	MP 005	Mess, Jean-Nicholas.....	MP 149	Millar, Alan.....	ThP 319
Meijer, Anthony J.H.M.....	ThP 002	Mess, Jean-Nicholas.....	MP 150	Millar, Alan.....	ThP 288
Meinhart, James Doug.....	TP 346	Mess, Jean-Nicholas.....	MP 144	Millar, Alan.....	MOF am 09:50
Meirelles, Flávio Vieira.....	ThP 289	Mess, Jean-Nicholas.....	MP 142	Millar, Alan.....	WP 235
Meiring, Hugo D.....	ThP 651	Mess, Jean-Nicholas.....	MP 146	Miller, Amanda.....	ThP 644
Meissen, John.....	WP 303	Mess, Jean-Nicholas.....	MP 145	Miller, Christine.....	WP 506
Meistermann, Hélène.....	WOF pm 2:30	Messias, Claudio.....	TP 150	Miller, Christine.....	WP 505
Meitei, Ningombam Sanjib.....	TP 170	Mestdag, Hélène.....	ThP 071	Miller, Christine.....	MP 426
Meka, Divakara (Bhuvan).....	ThP 033	Mestdag, Hélène.....	MP 382	Miller, Christine.....	MP 231
Mekebri, Abdou.....	WP 319	Mestecky, Jiri.....	TP 509	Miller, Christine.....	MP 575
Melcher, Karsten.....	MOA am 10:10	Metalnikov, Pavel.....	ThP 308	Miller, Christine A.....	ThP 475
Meldrum, Deirdre.....	ThP 212	Metz, Bernard.....	ThP 651	Miller, Emily.....	ThP 213
Meldrum, Deirdre.....	ThP 204	Metz, Thomas O.....	ThP 255	Miller, Galen.....	ThP 229
Meljon, Anna.....	TOC pm 2:30	Metz, Thomas O.....	WP 220	Miller, Jeff.....	WP 116
Mellacheruvu, Datta.....	MP 610	Metz, Tom.....	WP 234	Miller, Jeffrey.....	WP 092
Mellal, Mourad.....	MP 683	Meuwis, Marie-Alice.....	MP 574	Miller, Jeffrey.....	MOF pm 3:30
Melles, Daniel.....	WOG pm 3:50	Meyer, Andreas.....	TP 106	Miller, Jeffrey D.....	ThP 225
Melles, Daniel.....	TP 214	Meyer, Helmut E.....	ThP 594	Miller, John.....	TP 008
Mellinghoff, Ingo.....	ThP 436	Meyer, Helmut E.....	MP 523	Miller, Ken.....	WP 505
Mellors, J. Scott.....	TOG pm 3:50	Meyer, Matthew.....	MP 677	Miller, Ken.....	TP 622
Menaf Ayhan, Mehmet.....	WOE pm 3:10	Meyer, Melissa.....	TP 256	Miller, Ken.....	MP 575
Mendes, Maria Anita.....	TP 295	Meyer-Arendt, Karen.....	MP 581	Miller, Kristin.....	WP 249
Mendes, Vera.....	TP 172	Meza, Jose.....	WP 165	Miller, Lydia.....	TP 454
Mendes, Vera M.....	WP 257	Meza, Jose.....	MP 231	Miller, Marcus.....	TP 354
Mendez, Jacqui.....	WP 610	Meza, Jose.....	TP 630	Miller, Marcus.....	MP 405
Mendoza, Jhoana.....	TP 463	Meza, Jose.....	MP 426	Miller, Marcus.....	TP 372

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Miller, Mark L.....	ThP 377	Miura, Daisuke.....	WP 226	Monkkonen, Lucas.....	MP 203
Miller, Ronald A.....	TP 524	Miura, Daisuke.....	ThP 421	Monnier, Valérie.....	TP 339
Miller, Samuel I.....	WP 588	Miura, Daisuke.....	WP 215	Monnier, Valérie.....	TP 338
Miller, Scott.....	ThP 011	Miura, Daisuke.....	WP 692	Monroe, Eric.....	MOB am 09:50
Miller, Scott A.....	MP 140	Miura, Daisuke.....	WP 231	Monroe, Matthew.....	WP 377
Miller, Todd W.....	TP 566	Miura, Daisuke.....	TP 196	Monroe, Matthew.....	TP 141
Miller, Tyler.....	MP 677	Miyagawa, Hisashi.....	MP 120	Monroe, Matthew.....	WP 376
Miller, Vaughn.....	WP 162	Miyagi, Masaru.....	TP 484	Monroe, Matthew.....	TP 450
Miller, Vaughn.....	ThP 214	Miyagi, Masaru.....	TP 435	Monroe, Matthew E.....	TP 160
Miller, Vaughn.....	WP 161	Miyagi, Masaru.....	ThP 695	Montano, Carla.....	WP 338
Miller, Vaughn.....	ThP 192	Miyagi, Atsuko.....	ThP 534	Monteau, Fabrice.....	TP 363
Miller, Vaughn P.....	WP 160	Mizuno, Hajime.....	WP 295	Montgomery, Helen.....	ThP 652
Miller III, Frank P.....	ThP 373	Mizuno, Hajime.....	WP 285	Montgomery, Madeline.....	ThP 381
Milloy, Jeffrey.....	MP 459	Mizuno, Hajime.....	TP 011	Montgomery, Madeline A.....	ThP 377
Mills, Daniel.....	ThP 432	Mizuno, Hajime.....	WP 121	Montminy, Valérie.....	TP 277
Mills, David.....	MP 276	Mizuno, Hajime.....	MP 318	Montooth, Kristi.....	MP 262
Mills, David.....	MP 274	Mizuno, Hajime.....	WP 296	Montrose-Rafizdah, Chahrazad.....	TP 481
Mills, David.....	TP 168	Mizuno, Hajime.....	ThP 243	Moody-Bartel, Cheryl.....	ThP 657
Mills, David.....	ThOD am 09:50	Mizutani, Shiro.....	ThP 082	Moijj, Wijnand.....	TP 224
Mills, Marc A.....	MP 364	Mo, Jan-Rung.....	MP 667	Moon, Jeong Hee.....	ThP 449
Milosavljevic, Aleksandar.....	WP 025	Mo, Shunyan.....	WP 147	Moon, Pyong-Gon.....	TP 309
Min, Ho-Pil.....	TP 531	Mo, Shunyan.....	WP 345	Moon, Simon.....	TP 516
Min, Ho-Pil.....	ThP 589	Moch, Holger.....	MP 690	Moon, Sungyoon.....	TP 531
Min, Ho-Pil.....	WP 507	Modarelli, Jody.....	TP 510	Moon, Sungyoon.....	ThP 589
Min, Jung Won.....	ThP 169	Modarelli, Jody.....	MP 264	Mooney, Duane.....	TP 665
Min, Meng.....	MP 166	Moehring, Thomas.....	MP 106	Moore, Benjamin.....	ThP 553
Minajigi, Anand.....	ThP 504	Moehring, Thomas.....	MP 092	Moore, Bradley S.....	MP 500
Minda, Elizabeth.....	ThP 595	Moehring, Thomas.....	WP 424	Moore, David.....	ThP 670
Ming, Xun.....	MP 629	Moehring, Thomas.....	ThOE am 08:30	Moore, David.....	ThP 184
Minisini, Carole.....	WP 517	Moehring, Thomas.....	MP 560	Moore, David.....	WOG pm 4:10
Minkler, Paul E.....	MP 349	Moeller, Roy.....	ThP 083	Moore, Earl.....	TP 281
Minohata, Toshikazu.....	MP 165	Moench, Paul.....	MP 037	Moore, Earl.....	WP 143
Minohata, Toshikazu.....	MP 122	Moest, Hansjoerg.....	ThOD am 08:50	Moore, Jerry F.....	WP 428
Minohata, Toshikazu.....	WP 171	Mohamed, Soliman.....	WP 706	Moore, Jerry F.....	MP 586
Minshull, Jeremy.....	ThP 494	Mohammed, Shabaz.....	TOG am 09:30	Moore, Kenneth.....	TP 124
Miranda, Cristobal.....	WP 349	Mohammed, Shabaz.....	WOA pm 2:50	Moore, Kenneth.....	ThP 486
Mirhom, Youssef.....	ThP 324	Mohien, Ceereena.....	TP 626	Moore, Roger.....	TP 616
Mirnaghi, Fatemeh.....	ThP 126	Mohien, Ceereena U.....	ThP 611	Moore, Roger.....	ThP 278
Mirnaghi, Fatemeh.....	ThP 200	Mohimani, Hosein.....	ThP 330	Moore, Roger.....	MP 427
Mirokhin, Yuri.....	WP 289	Mohimani, Hosein.....	MP 498	Moore, Roger.....	TP 518
Mironov, Gleb.....	WP 343	Mohimani, Hosein.....	ThP 331	Moore, Ron.....	TP 567
Mirza, Shama.....	WP 709	Mohney, Robert.....	WP 236	Moore, Ronald J.....	ThP 088
Mirza, Shama.....	ThP 619	Möhring, Thomas.....	WP 078	Moore, Ronald J.....	WOA am 08:50
Misek, David E.....	TP 523	Mohsin, Sheher.....	TP 365	Moore, Ronald J.....	TP 160
Misek, David E.....	TP 588	Mohtashemi, Iman.....	ThP 106	Moore, Ronald J.....	TP 673
Misharin, Alexander.....	ThP 020	Moini, Mehdi.....	WP 203	Moore, Ronald J.....	ThP 211
Mishra, Priyanka.....	TP 557	Moise, Adrian.....	WP 605	Moore, Sarah.....	ThOD am 08:30
Misko, Tessianna.....	TP 510	Moiseenkova-Bell, Vera.....	WOG am 10:10	Moore II, Doyle Ray.....	WP 678
Misko, Tessianna.....	MP 264	Mojica, Wilfrido.....	ThP 678	Moorman, Matthew.....	TP 336
Mistrik, Robert.....	ThOA am 10:10	Molaioni, Francesco.....	ThP 363	Mora, Jose-Angel.....	MP 231
Mitamura, Kuniko.....	MP 117	Molchanova, Nina.....	MP 691	Moradian, Annie.....	ThP 618
Mitamura, Kuniko.....	MP 116	Molden, Rosalynn.....	ThP 621	Moradi-Tehrani, Navid.....	TP 294
Mitch, William.....	TOB am 08:30	Molden, Rosalynn.....	ThP 620	Moraes, Erica T.....	TP 306
Mitchell, Edwin.....	MP 111	Moldoveanu, Zina.....	TP 509	Morag, Mati.....	ThP 217
Mitchell, Matthew.....	WP 681	Molesworth, Sam.....	WP 119	Moran, Grainne.....	TP 350
Mitchell, Matthew.....	TP 190	Molina, Henrik.....	Special 001	Morash, Michael.....	TP 637
Mitchell, Paul.....	ThP 024	Molina, Jérôme.....	MP 420	Morast, Derrick L.....	MP 631
Mitchell, Paul.....	MP 095	Moliner, Patricia.....	WP 079	Mordehai, Alex.....	MP 091
Mitchell, Todd W.....	MP 253	Moliner, Patricia.....	WOF am 10:10	Mordehai, Alex.....	ThP 475
Mitchell, Todd W.....	MP 243	Mollah, Sahana.....	MP 589	Mordmüller, Benjamin.....	MP 616
Mitchell, Todd W.....	TOC pm 3:10	Mollah, Sahana.....	WP 519	Moree, Wilna.....	WP 420
Mitchell, Todd W.....	ThP 276	Mollah, Sahana.....	MOE pm 4:10	Morel, Denis.....	MP 028
Mitchell, Todd W.....	MP 244	Möller, Manfred.....	MP 071	Morel, Nathalie.....	MP 389
Mitchell, Todd W.....	MP 248	Mollova, Nevena.....	WP 519	Morgan, Aaron.....	MP 154
Mitelheiser, Sylvain.....	TP 546	Mollova, Nevena.....	WP 273	Morgan, Marsha K.....	WP 318
Miteva, Yana.....	ThP 606	Molloy, Mark.....	WP 660	Morgan, Nicole.....	TP 634
Mitra, Ashim K.....	WP 243	Molloy, Mark.....	ThP 609	Morgan, William.....	WP 234
Mitra, Ashim K.....	WP 386	Molloy, Mark.....	ThP 694	Morgner, Nina.....	TOD pm 3:50
Mitra, Indranil.....	MP 465	Molnar, Kathleen.....	TP 498	Mori, Masaru.....	MP 173
Mitra, Srijeet.....	MOE pm 2:30	Mommen, Geert P.M.....	ThP 651	Morikawa, Yoshio.....	WP 269
Mitrovic, Bojan.....	TP 470	Momoh, Paul.....	WP 321	Morimoto, Kentaro.....	MP 445
Mittermayr, Stefan.....	MP 283	Monaco, Claudia.....	ThP 250	Morimoto, Kentaro.....	ThP 582
Mittler, Gerhard.....	WP 185	Monastyrsky, Mikhail.....	ThP 081	Morin, Gregg B.....	ThP 618
Mittler, Ron.....	ThP 251	Monazzam, Azita.....	ThP 623	Morin, Louis-Philippe.....	MP 145
Mitulovic, Goran.....	WP 471	Monell, Craig.....	MP 553	Morin, Louis-Philippe.....	MP 146
Miura, Daisuke.....	ThP 242	Mongrand, Sébastien.....	MP 237	Morishetti, Kiran Kumar.....	TP 348
Miura, Daisuke.....	TP 205	Monk, Rebecca H.....	ThP 694	Moritz, Albrecht.....	ThP 521

INDEX OF AUTHORS

Moritz, Franco.....	ThP 256	Mueller, Bettina.....	ThP 208	Muthusamy, Babylakshmi	ThP 689
Moritz, Robert.....	TP 149	Mueller, David	TP 071	Muthusamy, Babylakshmi	TP 638
Moritz, Robert.....	ThP 409	Mueller, David	TP 070	Mutlu, Esra.....	WP 675
Moritz, Robert.....	WP 381	Mueller, Markus	ThP 390	Myers, Jeremy	TOC am 10:10
Moritz, Robert.....	WP 369	Mueller, Markus	MP 446	Myers, Jeremy S.	MP 314
Moritz, Robert.....	Special 001	Mueller, Mathias.....	MP 092	Myers, Matt	ThP 604
Moritz, Robert.....	ThP 386	Mueller, Rolf	WP 305	Myers, Matthew V.....	TOA am 09:10
Moritz, Robert L.	WP 505	Mueller, Thomas.....	ThP 424	Myers, Nichole R.	WP 670
Moriyama, Kengo	TP 708	Muguruma, Miho	ThP 534	Myers, Samuel	ThP 483
Morre, Jeffrey	MP 622	Muhammad, Jerry	WP 279	Myers, Todd	MP 399
Morre, Jeffrey	WP 346	Muharib, Tasneem	ThP 630	Myint, Khin.....	MP 312
Morre, Jeffrey	ThP 219	Muijzer, Gerard	MP 533	Mylne, Joshua.....	ThP 331
Morrell, Josie	WP 412	Mukherjee, Paromita	TP 427	Mylonas, Roman.....	WP 364
Morris, Brandon	ThP 349	Mukhopadhyay, Aindrila	TP 717	Myung, Seung-Woon.....	TP 360
Morris, Meaghan	ThP 459	Mulholland, Niveen	MP 551	Myung, Seung-Woon.....	TP 373
Morris, Michael	WOB pm 4:10	Mulla, Hussain	TP 236	Myung, Sunnie.....	WOG am 09:50
Morris, Michael	ThOB pm 3:50	Mullangi, Vennela	TP 484	Na, Seungjin.....	TP 444
Morris, Michael	WP 006	Müllen, Klaus	TP 262	Nacht, Mariana.....	ThP 185
Morris, Michael	MOB am 10:10	Muller, Hendrik	MOE am 08:30	Nachtigall, Fabiane	TP 293
Morris, Robert E.	MP 360	Müller, Hans Werner	ThP 594	Nadia, Rachdaoui	WP 561
Morris-Kukoski, Cynthia	ThP 381	Müller, Stephan.....	WP 628	Naegele, Edgar	MP 308
Morsa, Denis	MP 061	Mulligan, Christopher	TP 049	Nagadoi, Aritaka	WP 535
Morse, Michael A	TP 457	Mulligan, Christopher	WP 307	Nagano, Hisashi	MP 395
Morse, Ryan	WP 165	Mulligan, Christopher	WP 308	Nagao, Hirofumi.....	ThP 068
Morse, Sarah	ThP 617	Mulligan, Christopher	TP 048	Nagao, Hirofumi.....	ThP 066
Mortazavi, Amir	ThP 601	Mulvana, Daniel	ThP 163	Nagao, Hirofumi.....	ThP 067
Mortazavi, Amir	MP 325	Mulvana, Daniel	ThP 136	Nagao, Hirofumi.....	TP 418
Mortensen, Daniel	WP 051	Mulvey, George.....	WP 550	Nagao, Tatsuhiko	TP 205
Mortishire-Smith, Russell	TP 224	Mun, Hyoyoung.....	ThP 140	Nagao, Tatsuhiko	WP 226
Mortishire-Smith, Russell J.....	TP 222	Munoz, Javier	TP 549	Nagaraj, Nagarjuna	TP 706
Moseley, Arthur	TP 709	Muntean, Felician	ThP 083	Nagaraj, Nagarjuna	WP 082
Moseley, Arthur	ThOE am 09:50	Muntel, Jan	ThP 460	Nagaraju, Kanneboyina	TP 655
Moseley, Arthur	ThP 397	Murage, Eunice	MP 526	Nagel, Marcus.....	ThP 085
Moseley, M. Arthur	WP 645	Murage, Gladys	ThP 151	Nagore, Linda	TP 683
Moseley, M. Arthur	ThP 517	Murase, Masaki	MP 445	Nagore, Linda	TP 600
Moseley, M. Arthur	MP 585	Murase, Masaki	ThP 582	Nagore, Linda	MP 670
Moseley, M. Arthur	MP 483	Murase, Masaki	ThP 629	Nahas, Shareef A.	WP 396
Moseley, M. Arthur	MP 232	Murata, Mitsuru.....	WP 439	Nahnsen, Sven.....	ThP 410
Moseley, M. Arthur	WP 601	Murphy, Brian	WP 352	Nahon, Laurent	WP 025
Mosely, Jackie	TP 335	Murphy, Brian	WP 141	Nahon, Laurent	ThOD pm 4:10
Mosely, Jackie	MP 126	Murphy, Dennis L	TP 679	Naimi, Sarah	MP 108
Moskovets, Eugene.....	MP 576	Murphy, Elizabeth.....	WP 460	Nair, Divya	MP 538
Moskovets, Eugene.....	MP 227	Murphy, Francis	MP 289	Naito, Yasuhide.....	TP 418
Mosley, Amber L	WP 468	Murphy, James	WP 336	Naito, Yasuhide.....	TP 417
Mosoarca, Christina	TOF am 08:30	Murphy, James	WP 270	Najarro, Marcela C.....	MP 396
Moss, Christopher	MOC am 09:10	Murphy, Jason	MOA am 09:50	Nakagawa, Katsuhiko	TP 357
Moss, Nathan	ThP 233	Murphy, Keeley	TP 082	Nakagawa, Makoto	MP 312
Mostovenko, Ekaterina	WP 632	Murphy, Keeley	WP 138	Nakai, Risa	MP 116
Mounfield, William	TP 412	Murphy, Keeley	TP 090	Nakai, Tsutomu.....	WP 266
Mouttaki, Housna	ThOC pm 2:50	Murphy, Keeley	ThOE am 09:30	Nakai, Tsutomu.....	MP 123
Movahed, Navid	MOB pm 3:50	Murphy, Leigh C.	ThP 524	Nakajima, Eri	MP 395
Mowry, Curtis	TP 336	Murphy, Nancy.....	WP 610	Nakajima, Hiroki	TP 343
Moy, Tom.....	MP 024	Murphy, Robert.....	TP 158	Nakamoto, M.Y.	ThP 608
Moy, Tom.....	ThOG am 08:50	Murphy, Robert C.	MP 255	Nakamura, Takemichi	ThP 329
Moya, Pablo.....	TP 679	Murphy, Robert C.	WOC am 08:30	Nakashima, Daisuke	ThP 067
Moyer, Susanne	WP 558	Murphy, Robert C.	MP 238	Nakasono, Masanobu	ThP 066
Moyer, Susanne	WP 556	Murray, David	WP 166	Nakatomi, Akiko.....	MP 618
Mozdziak, Paul	WP 236	Murray, Ernest.....	WP 109	Nakayama, Hiroshi	WP 180
Mreyen, Marcus	MP 259	Murray, Kermit K.....	ThP 203	Nakayama, Hiroshi	WP 179
Mu, Hui.....	ThP 455	Murray, Kermit K.....	MP 546	Nakayama, Shoji F	MP 364
Muchena, John.....	WOD pm 2:30	Murray, Kermit K.....	TP 014	Nakazawa, Takashi	TP 484
Muck, Alexander	MP 520	Murray, Kermit K.....	WOE am 09:30	Nakazawa, Takashi	ThP 534
Mucke, Lennart.....	ThP 459	Murray, Kermit K.....	WP 624	Nally, Jordan	WP 140
Muddiman, David	WP 236	Murray, Kermit K.....	TP 390	Nam, Moon Suk	WP 127
Muddiman, David C.	MP 519	Murray, Kermit K.....	TP 028	Nam, Won Seok	WP 245
Muddiman, David C.	TP 385	Murray, Kermit K.....	TP 015	Namiki, Jun	TP 536
Muddiman, David C.	WP 643	Murray, Kermit K.....	ThP 423	Nan, Jie	ThP 395
Muddiman, David C.	ThP 093	Murty, Lia	ThP 313	Nanavati, Dhaval.....	WP 598
Muddiman, David C.	WP 302	Muruganantham, Sasirekha	ThP 440	Nanda, Jyoti	ThP 681
Muddiman, David C.	WP 212	Musa, Fawaz.....	WP 435	Nandakumar, M.P.	WP 301
Muddiman, David C.	MP 012	Musante, Ashlan.....	WP 709	Nandakumar, M.P.	MP 555
Muddiman, David C.	WP 529	Musapelo, Thabiso.....	TP 015	Nandakumar, Renu.....	WP 301
Muddiman, David C.	TP 527	Musselman, Brian	TP 038	Nandini, Sahasrabuddhe.....	ThP 696
Muddiman, David C.	MP 285	Musselman, Brian D.....	TP 078	Nanjappa, Vishalakshi	ThP 689
Muddiman, David C.	TP 610	Musselman, Brian D.....	TP 043	Nanney, Lillian B	WP 448
Mueller, Benjamin F.....	ThP 578	Musser, Steve.....	WP 075	Nanni, Paolo	WP 388
Mueller, Benjamin F.....	TP 578	Musser, Steven M.....	MP 564	Naoki, Hideo.....	ThP 333

INDEX OF AUTHORS

Napoli, Anna.....	ThP 317	Newkome, George R.	ThOC am 09:10	Nihei, Yoshito	ThP 383
Napoli, Anna.....	WP 133	Newman, Walter	TP 703	Nihei, Yoshito	TOC am 08:50
Narain, Niven R.....	TP 664	Newsome, Andrew	WP 352	Nik, Sara.....	TP 631
Narain, Niven R.....	TP 663	Newsome, G. Asher	MP 112	Nikitin, Frédéric.....	ThP 390
Narasimhachary, Santosh.....	ThP 139	Newsome, G. Asher	MP 412	Nikolaev, Eugene.....	ThP 479
Narayan, Srinivas.....	WP 689	Newsome, Scott.....	TP 690	Nikolaev, Eugene.....	ThP 060
Narayanasamy, Suresh	ThP 538	Neyer, David	ThP 094	Nikolaev, Eugene.....	MP 010
Narayanaswamy, Pradeep	MP 257	Ng, Chun Ming Dominic	WP 484	Nikolaev, Eugene.....	MP 104
Narciso Godoi, Marla.....	MP 040	Ng, Chun Ming Dominic	WP 482	Nikolaev, Eugene.....	MP 102
Narciso Godoi, Marla.....	WP 020	Ng, Dominic C. M.	WP 485	Nikolaev, Eugene.....	WOE pm 4:10
Nardi, Regina.....	TP 216	Ng, Dominic C. M.	WP 325	Nikolaev, Eugene.....	MP 101
Narne, Chandrahas.....	WP 402	Ng, Dominic Chun Ming	ThP 452	Nikolaev, Eugene.....	ThP 077
Nascimento, Claudio Augusto O.	TP 295	Ng, Julio	MP 456	Nikolaev, Eugene.....	ThP 669
Nascimento, Heliara Lopes.....	TP 291	Ng, Kenneth	WP 550	Nikolaev, Eugene.....	MP 094
Nascimento, Heliara Lopes.....	TP 306	Ng, Ricky	MP 410	Nikolaev, Eugene.....	ThP 400
Nash, John	WP 191	Ng, Sandy	MP 538	Nikolaev, Eugene.....	ThP 359
Nash, John	WP 022	Ng, Wailap Victor	MP 439	Nikolau, Basil.....	WP 425
Nash, John	WP 021	Ngo, Ben.....	WP 142	Nikolau, Basil.....	ThP 230
Nash, John J.....	ThOB pm 3:10	Ngo, Ben.....	ThP 206	Nikolau, Basil J.....	MP 184
Nash, Tara	MOE pm 2:30	Ngo, Tuan	ThP 514	Nikolau, Basil J.....	ThP 220
Nashed-Samuel, Yasser.....	TP 111	Ngo, Tuan	TP 700	Nikolic, Dejan	WP 348
Nasioudis, Andreas.....	ThOC am 10:10	Ngo, Tuan	ThP 387	Nikolic, Dejan	TP 275
Nath, Avindra	TP 590	Nguyen, Andrew	MP 480	Nikolova, Penka	WOE pm 4:10
Nath, Avindra	ThP 603	Nguyen, Bich	ThP 691	Niles, Richard	WP 638
Nath, Avindra	TP 690	Nguyen, Crystal	TP 240	Niles, Richard	MP 668
Nattrass, Chris.....	ThP 163	Nguyen, Don	ThP 494	Nilse, Lars	ThP 410
Nauli, Surya	ThP 419	Nguyen, Elizabeth	MP 442	Nilse, Lars	ThP 398
Navare, Arti.....	TP 630	Nguyen, Hien.....	MP 194	Nilsson, Anna.....	TOF pm 3:10
Navarro, Pedro	ThP 395	Nguyen, Hien.....	WP 136	Ninomiya, Satoshi	TP 054
Navarro, Pedro	WP 707	Nguyen, Hien.....	WP 031	Ninomiya, Satoshi	TP 062
Navarro, Pedro	WP 091	Nguyen, Hong Hanh.....	MP 534	Ninonuevo, Milady	TP 532
Navarro, Pedro	MP 596	Nguyen, Lieu	TP 246	Niñonuevo, Milady R.	MP 279
Nawrocki, Arkadiusz	ThP 568	Nguyen, Ngoc	TP 314	Niñonuevo, Milady R.	ThP 555
Nazarov, Erkinjon.....	ThP 376	Nguyen, Son N.....	TP 123	Nirasawa, Takashi	WP 226
Neal, Andrea	MP 368	Nguyen, Steve	WP 700	Niroomand, Shahriar.....	TP 524
Neale, Jason	TP 235	Nguyen, Trung.....	ThP 658	Nirudodhi, Sasidhar	ThP 327
Nedved, Mike.....	TP 127	Nguyen, Viet Hung	ThP 019	Nirudodhi, Sasidhar N	TP 491
Needham, Shane.....	TP 238	Nguyen, Viet Hung	WP 188	Nishida, Yukiko	MP 311
Needham, Shane.....	ThP 095	Nguyen, Vivian	MP 202	Nishikaze, Takashi	TP 165
Negrotti, David	WP 093	Nguyen-Hak, Rosanna	ThP 123	Nishimoto, Yukari	MP 193
Nei, Yuan-wei	WP 034	Ni, Qihui	ThP 120	Nishimura, Osamu	ThP 534
Neidherr, Dennis	MP 108	Ni, Qihui	WP 104	Nishimura, Yoshifumi	WP 535
Neilson, Karlle A.....	ThP 309	Ni, Wenqin	ThP 478	Nishine, Tsutomu	WP 354
Nel, Andrew	ThP 662	Ni, Yan	WP 288	Nishine, Tsutomu	TP 343
Nelson, Marna	WP 425	Nichols, Douglas	MP 399	Nishioka, Takaaki	ThP 383
Nelson, Robert.....	ThP 354	Nichols, Drew	ThP 638	Nishioka, Takaaki	TOC am 08:50
Nelson, Shannen	WP 599	Nichols, Kelly K	ThP 277	Nishiumi, Shin	ThP 282
Nemeth, Jennifer F.	WP 631	Nichols, William	TP 334	Nishshanka, Upul	WP 110
Nemeth, Jennifer F.	TP 485	Nicholson, Jeremy	ThP 428	Nissen, Silke.....	MP 214
Nemeth, Jennifer F.	WOG am 08:30	Nicholson, Jeremy	ThOG am 09:10	Nita-Lazar, Aleksandra	ThP 509
Nemeth, Jennifer F.	MP 201	Nicholson, Jeremy K.	ThP 250	Nita-Lazar, Aleksandra	MP 511
Neogi, Purnima	WP 451	Nicholson, Judith	TP 394	Nitsch, Robert.....	MP 269
Nepomuceno, Angelito I.	TP 610	Nickens, Zacharie.....	TP 457	Nitta, Shin-ichiro	WP 266
Neslund, Chuck.....	MP 371	Nicklay, Joshua	TP 427	Niu, Degiang.....	ThP 185
Nesumi, Atsushi.....	WP 215	Nicol, Gordon R.....	ThP 465	Niwa, Haruki.....	TP 182
Nesvizhskii, Alexey	MP 610	Nicolardi, Simone	WP 653	Niwayama, Satomi.....	TP 692
Nesvizhskii, Alexey	WP 389	Nicolas, Laurent	ThP 099	Nobe, Yuko.....	WP 180
Nesvizhskii, Alexey	ThP 406	Nicora, Carrie D.	TP 160	Noble, William.....	TOA pm 3:30
Nesvizhskii, Alexey	WP 369	Nie, Bei.....	ThP 101	Noble, William.....	WP 380
Nesvizhskii, Alexey	ThP 386	Nieckarz, Robert J.	ThP 001	Noble, William S.....	WP 368
Neta, Pedatsur.....	WP 493	Nieckarz, Robert J.	ThP 009	Noble, William Stafford.....	WP 573
Neta, Pedatsur.....	ThOA am 09:50	Nieckarz, Robert J.	ThP 551	Noel, Teresa	TP 606
Nethero, William C.	WP 670	Niedzwiecki, Brian.A.	WP 021	Nogueira Eberlin, Marcos	WP 020
Neto, Carlos Pascoal	ThP 328	Niehaus, Karsten	TP 195	Nokihara, Kiyoshi	WP 575
Nettey, Samuel.....	ThOB pm 2:30	Nieland, Bertram.....	TP 362	Nolan, Roger	TP 279
Netušilová, Kateřina	ThP 294	Nielsen, Christoffer T	ThP 591	Nold, Michael	WP 400
Network, CPTAC.....	TOA am 10:10	Nielsen, Erik	TP 399	Noll, Robert J.....	TP 076
Neubert, Hendrik.....	MP 657	Nielsen, Michael Lund.....	WP 698	Noll, Robert J.....	ThP 073
Neubert, Patrick.....	ThP 584	Nielsen, Peter K	TP 159	Nolting, Dirk	MP 557
Neubert, Thomas	MP 431	Nies, Brian J.....	TP 031	Nolting, Dirk	MP 092
Neubert, Thomas	ThP 511	Niessen, Sherry	WP 379	Nomura, Naruaki	MP 655
Neuman, J. Andrew	MP 109	Niessing, Dierk.....	ThOD pm 2:30	Noonan, Gregory	TP 353
Neupert, Susanne	ThP 152	Nieves, Edward.....	WP 609	Noonan, Gregory O.	TP 352
Neussl, Dietmar	MP 328	Nieves, Edward	TP 587	Nordstrom, Anders	WP 304
Newburg, David	MP 280	Niewiarowski, Peter	MP 267	Nørgaard, Asger	MP 026
Newburg, David S.	MP 235	Niggebrugge, Adlai E	ThP 108	Nørgaard, Asger W.	MP 027
Newell, Keri.....	TP 660	Nightingale, Peter.....	TOC am 09:50	Noriega, Mary	TOB am 09:10

INDEX OF AUTHORS

Norris, Jeremy L.....	WP 524	Oh, Seul.....	WP 244	Oomens, Jos.....	ThP 001
Northen, Trent.....	WP 438	Oh, Sungwhan.....	MP 251	Oomens, Jos.....	ThOE pm 4:10
Northen, Trent.....	WP 694	Oh, Yeon Yee.....	WP 529	Oomens, Jos.....	WP 052
Norton, Isaiah.....	WP 442	O'Hair, Richard A. J.	WP 056	Oomens, Jos.....	MOC pm 2:50
Norwood, Kimberly.....	ThP 163	O'Hair, Richard A. J.	TP 505	Oomens, Jos.....	ThP 002
Nose, Holliness.....	ThOB am 09:10	O'Hair, Richard A. J.	ThP 005	Oomens, Jos.....	ThP 004
Nottebaum, Lynde.....	MP 553	O'Hair, Richard A. J.	ThOB am 09:30	Oomens, Jos.....	ThOB am 10:10
Novak, Bruce.....	MP 285	O'Hair, Richard A. J.	ThOB pm 3:30	Oomens, Jos.....	WP 498
Novak, Jan.....	TP 509	O'Hair, Richard A. J.	MOC pm 2:50	Oomens, Jos.....	ThP 006
Novak, Petr.....	TP 476	O'Hair, Richard A. J.	WP 065	Oomens, Jos.....	ThP 005
Novak, Petr.....	MP 606	Ohashi, Yoko.....	TP 182	Oomens, Jos.....	WP 497
Novak, Petr.....	ThP 418	Ohashi, Yoshiharu.....	ThP 442	Ooms, Bert.....	TP 263
Novak, Petr.....	ThP 561	Ohga, Takuhasi.....	MP 314	Opalenik, Susan.....	TP 143
Novakova, Michaela.....	MP 209	Ohki, Shin-ya.....	MP 618	Openshaw, Mathew E.....	MP 567
Novick, Scott.....	MOB am 09:10	Ohlund, Leanne B.....	MP 336	Openshaw, Matthew.....	MP 291
Novick, Scott.....	TP 481	Ohmori, Takeshi.....	WP 647	Oppenheimer, Stacey R.....	WP 415
Novik, Veronica.....	MP 530	Ohmura, Mitsuyo.....	WP 439	Oppenheimer, Stacey R.....	WP 419
Novorodovskaya, Natalia.....	MP 553	Ohsawa, Isaac.....	WP 647	Oppermann, Felix.....	MP 682
Nowak, John B.....	MP 109	Ojima, Yuya.....	TOC am 08:50	Oppermann, Madalina.....	WP 287
Nuccio, Arthur.....	WP 392	Ok, Myung Ahn.....	WP 334	Oradu, Sheran.....	ThP 424
Numazawa, Mitsuteru.....	ThP 268	Okamoto, Sumiko.....	TP 153	Orešič, Matej.....	MP 676
Núñez, Alberto.....	TP 331	Okazaki, Osamu.....	TP 215	Orfanoudaki, Georgia.....	WP 069
Nusbaum, Michael P.....	MP 473	Okhonin, Victor.....	WP 343	Orlando, Ron.....	MP 220
Nussenzeiwig, Michel C.....	WOG am 09:50	Okoro, Chinyere.....	MP 536	Orlando, Ron.....	ThP 463
Nuwaysir, Lydia.....	WP 606	Okumura, Dausuke.....	ThP 082	Orlando, Ron.....	WP 392
Nwosu, Charles.....	ThP 484	Okumura, Hisako.....	TP 165	Orlando, Ron.....	ThP 476
Nwosu, Charles C.....	WOD am 08:50	Olah, Timothy.....	MOF am 08:50	Orlando, Ron.....	MP 284
Nyadong, Leonard.....	MP 013	Olah, Timothy.....	WP 153	Orlando, Ron.....	MP 226
Nyakas, Adrien.....	WP 174	Olah, Timothy.....	MP 139	Orlando, Ron.....	WP 393
Nyakas, Adrien.....	ThOD pm 3:10	Olah, Timothy.....	WP 092	Orlando, Thomas.....	MP 021
Nyamekye, Kofi.....	ThP 623	Olano, L. Renee.....	WP 372	Orner, Gayle A.....	TP 248
Nygren, Heli.....	MP 676	Old, William.....	MP 658	Orphan, Victoria.....	MP 214
Nyman, Ann.....	ThP 303	Old, William.....	MP 450	Orta, Adan.....	ThP 205
Obach, Scott.....	TP 230	Old, William M.....	MP 581	Ortega-Rodriguez, Uriel.....	MOE am 10:10
Obach, Scott.....	TP 229	Oldenburg, Thomas.....	TP 301	Orth, Kim.....	ThP 490
Obeng, Marcus.....	MP 260	Oldham, Neil J.....	WP 546	Ortiz, Alexia.....	WP 517
Oberacher, Herbert.....	WP 189	Oldham, Neil J.....	ThP 559	Ortiz, Alexia.....	WP 640
Oberacher, Herbert.....	WOF pm 2:50	Oleary, Michael.....	MP 032	Orton, Daniel.....	TP 141
Oberbörtsch, Stefan.....	ThP 210	O'Leary, H. Angharad.....	MP 279	Orton, Daniel J.....	TP 160
Oberlander, Tim F.....	ThP 587	O'Leary, Michael.....	TP 332	Orton, Daniel J.....	ThP 088
Obikhod, Aleksandr.....	WP 279	O'Leary-Steele, Catherine.....	WP 109	Orton, Daniel J.....	ThP 211
Obolensky, Oleg.....	WP 499	Olenici-Craciunescu, Bogdan.....	TP 053	Orugunty, Ravi.....	ThP 205
Obong-Ebong, Ima.....	TOD pm 3:50	Olinares, Paul Dominic B.....	MOE pm 3:10	Orugunty, Ravi.....	WP 097
O'Brien, Ann.....	WP 181	Oliphant, Joe.....	ThP 061	Osaka, Issey.....	MP 618
O'Brien, Darragh P.....	TP 675	Oliveira, Jennifer.....	WP 165	Osborn, Joshua.....	MOE pm 2:50
O'Brien, Darragh P.....	TP 686	Oliveira-Silva, Diogo.....	TOB am 09:50	Osborne, Kyle.....	ThP 044
O'Brien, John.....	MP 627	Oliver, Richard P.....	ThP 225	Osburn, Sandra.....	ThP 005
O'Brien, John.....	TP 047	Olivier, Fedeli.....	WOF am 10:10	Osburn, Sandra.....	MOC pm 2:50
O'Brien, Rob.....	MP 017	Olivier, Marie-Françoise.....	ThOG am 09:50	Osgood, Sarah.....	ThP 213
O'Brien, Rob.....	MP 020	Olivier, Michael.....	WP 709	Oshimura, Mitsuo.....	WP 266
O'Brien, Shannon.....	WP 672	Olivier, Michael.....	ThP 619	Osiewacz, Heinz D.....	ThP 688
Obsil, Tomas.....	TP 476	Olsen, Jesper V.....	MP 494	Ospina, Maria.....	WP 648
O'Connor, Daniel.....	WP 703	Olsen, Mark A.....	WP 560	Ossipova, Elena.....	TP 659
O'Connor, Peter.....	TP 561	Olson, Doug J.....	MP 233	Ossola, Reto.....	WP 505
O'Connor, Peter B.....	MP 084	Olson, Lisa.....	WP 682	Østergaard, Ole.....	ThP 591
O'Connor, Peter B.....	ThP 480	Olson, Loren.....	ThP 201	Ostovic, Judy.....	TP 109
O'Connor, Peter B.....	MP 094	Olson, Loren.....	MOF am 10:10	Ostrand-Rosenberg, Suzanne.....	ThP 654
O'Connor, Peter B.....	ThP 070	Olson, Loren.....	WOG pm 3:30	Ostrowski, Lawrence.....	TP 584
O'Connor, Peter B.....	ThP 477	Olson, Loren.....	WP 088	OSUGA, JYUNICHI.....	ThP 218
O'Connor, Sarah E.....	ThOG am 10:10	Olson, Matthew.....	WP 382	Osula, Omoruyi.....	ThP 503
Oda, Yashiya.....	MP 312	O'Malley, Bert W.....	MOA am 08:50	Ott, Carolyn.....	TP 634
Oda, Yashiya.....	TP 589	O'Meally, Robert.....	ThP 029	Ott, Ingo.....	TP 106
Oda, Yashiya.....	MP 445	Omolu, Ndukaku.....	ThP 305	Ott, Lee.....	ThP 246
Oda, Yashiya.....	TP 674	Omene, Benedicta O.....	TP 278	Otto, Matthias.....	TP 300
Oda, Yashiya.....	ThP 383	O'Neill, Heather.....	WP 578	Ouaskit, Said.....	WP 019
O'Donoghue, Niaobh.....	MP 283	O'Neill, Colleen.....	TP 611	Ouyang, Zheng.....	MP 048
Odoro, Akua.....	WP 709	O'Neill, Michael.....	ThP 654	Ouyang, Zheng.....	ThP 073
Ogami, Atsuko.....	ThP 534	Ong, Chih Wei.....	TP 310	Ouyang, Zheng.....	TOE pm 4:10
Ognibene, Ted.....	TP 024	Ongena, Marc.....	MOD pm 2:50	Ouyang, Zheng.....	WOE am 09:10
Ogourtsov, Sergey.....	MP 497	Onghena, Mathias.....	MP 242	Ouyang, Zheng.....	ThP 424
Ogundare, Michael.....	TOC pm 2:30	Onodera, Jun.....	TP 345	Ouyang, Zheng.....	TP 018
Ogura, Tairo.....	MP 123	Onodera, Jyun.....	MP 240	Ouyang, Zheng.....	ThP 036
Ogura, Tairo.....	MP 119	Onorato, Joelle.....	MP 263	Ouyang, Zheng.....	TP 034
Ogura, Tairo.....	WP 354	Ooga, Takushi.....	TOC am 10:10	Ouyang, Zheng.....	TP 405
Ogurtsov, Aleksey Y.....	MP 464	Oomens, J.....	ThP 003	Ouyang, Zheng.....	MP 046
Ogurtsov, Aleksey Y.....	WP 370	Oomens, Jos.....	MOC pm 2:30	Ouyang, Zheng.....	TP 035
Oguz, Umut.....	ThP 238	Oomens, Jos.....	MOC pm 3:50	Ouyang, Zheng.....	TP 283

INDEX OF AUTHORS

Ouyang, Zheng	TP 019	Pan, Chongle	TP 620	Park, Sung Gun	TP 028
Ouyang, Zheng	MP 047	Pan, Hefeng	MP 023	Park, Sung Gun	WOE am 09:30
Ouyang, Zheng	TOF am 09:50	Pan, Hefeng	MP 022	Park, Sung Kyu	WP 697
Ouyang, Zheng	ThOG pm 2:50	Pan, Jingxi	TP 471	Park, Sung Kyu	MP 511
Ovchinnikova, Olga	ThOG pm 4:10	Pan, Jingxi	MOB pm 2:30	Park, Sung Kyu	ThP 407
Ovchinnikova, Olga	TP 408	Pan, Jiongwei	WP 126	Park, Sung-Kug	MP 070
Owen, Benjamin	TP 289	Pan, Jiongwei	WP 671	Park, Sung-Soo	WP 658
Owen, Benjamin	MP 031	Pan, Sheng	ThP 677	Park, Taeseong	ThP 270
Owens, Kevin G.	ThP 160	Pan, Yan	MOB pm 2:30	Park, Young Seung	MP 236
Owens, Kevin G.	ThP 161	Pan, Yan	TOD am 08:50	Park, Youngja	TP 095
Ozawa, Tomoyuki	MP 193	Panawennage, Deepika	TOB pm 3:50	Parker, Carol E.	WP 597
Ozbal, Can "Jon"	ThP 192	Panchagnula, Venkateswarlu	MP 333	Parker, David	TP 335
Ozcan, Sureyya	WOG am 09:30	Panchal, Mai	ThP 269	Parker, Kenneth	TP 389
Ozcan, Sureyya	MP 694	Panchaud, Alexandre	MP 501	Parker, Kenneth	WP 651
Ozohanics, Oliver	TP 528	Panchaud, Alexandre	MP 522	Parker, Kenneth	ThP 159
Paape, Rainer	ThP 585	Panchenko, Tatyana	WP 476	Parker, Laurie	MP 611
Paape, Rainer	TP 403	Pandey, Akhilesh	ThP 689	Parker, Rachel	MP 607
Paape, Rainer	ThP 430	Pandey, Akhilesh	TP 617	Parkinson, Andrew	TP 132
Pacchiarotta, Tiziana	ThP 249	Pandey, Akhilesh	ThP 521	Parks, Bryan	MP 391
Pace, Danielle	TP 128	Pandey, Akhilesh	ThP 697	Parks, John S.	TP 652
Pacheco, Luis	TP 644	Pandey, Akhilesh	ThP 696	Parrales, Lenin	TP 040
Pachl, Fiona	ThP 464	Pandey, Akhilesh	TP 622	Parrish, David D.	MP 109
Packer, Nicolle H.	ThP 566	Pandey, Akhilesh	TP 383	Parrish, Matthew	TP 307
Padovan, Julio Cesar	ThP 150	Pandey, Akhilesh	WP 693	Parsi, David	TP 393
Paehler, Axel	TP 223	Pandey, Akhilesh	TP 635	Parson, Whitney	WOF am 09:50
Paek, Eunok	TP 444	Pandey, Akhilesh	WP 695	Parthasarathy, Satishchandra	ThP 697
Paek, Han C.	MP 136	Pandey, Akhilesh	WP 461	Parthun, Mark R.	WP 708
Paek, Ock-Jin	MP 070	Pandey, Akhilesh	WP 634	Parthun, Mark R.	MP 516
Page, Jason S.	WOE am 08:50	Pandey, Akhilesh	TP 638	Parti, Rajesh	WP 391
Page, Jonathan E.	ThP 232	Panetta, Rosemarie	ThP 189	Partouche, Franck	WP 201
Pagnotti, Vincent	ThP 437	Pang, Eric	MP 637	Pasa-Tolic, Ljiljana	TP 567
Pagnotti, Vincent	ThOG pm 3:50	Pang, Ringo Hon Fung	ThP 452	Pasa-Tolic, Ljiljana	MOD am 09:30
Pagnotti, Vincent S.	WOE am 09:50	Pang, Shaokun	WP 088	Pasa-Tolic, Ljiljana	ThOA pm 2:30
Pai, Pei-Jing	TP 492	Pang, Shaokun	TP 221	Pasa-Tolic, Ljiljana	MP 099
Pai, Pei-Jing	ThP 546	Pang, Shaokun	ThP 187	Pasa-Tolic, Ljiljana	ThOC pm 3:10
Pailleux, Floriane	MP 508	Pani, Luca	ThP 179	Pasa-Tolic, Ljiljana	TP 450
Paine, Martin R. L.	MP 129	Pankow, Sandra	ThOD am 10:10	Pasa-Tolic, Ljiljana	MP 594
Paine, Martin R. L.	MP 038	Pannell, Lewis K.	MP 685	Paša-Tolić, Ljiljana	WOA am 08:50
Paiva, Anthony	WP 259	Pannell, Lewis K.	MP 289	Pascal, Bruce	TP 481
Paizs, Bela	MOC am 08:30	Pannell, Lewis K.	TP 445	Pascal, Bruce D.	MOB am 09:10
Pak, HuiSong	MP 446	Panning, Barbara	ThP 483	Pascal, Bruce D.	MOA am 10:10
Pal, Debnath	ThP 137	Panse, Christian	WP 388	Paschke, Carmen	MP 453
Pal, Manoj	WP 554	Pantazatos, Dennis	TP 503	Pasculescu, Adrian	ThP 406
Palandra, Joe	WP 669	Pantoja, Patricia Araujo	TP 295	Pasculescu, Adrian	WP 706
Palaniappan, Krishnan	ThP 612	Paonessa, Joseph D.	MP 153	Pasquarello, Carla	ThP 390
Palapetta, Shyam	ThP 521	Papanastasiou, Malvina	WP 069	Pasquarello, Carla	MP 446
Palazoglu, Mine G.	MP 322	Papanastasiou, Malvina	WP 540	Pasquier, Olivier	TP 120
Palczewski, Krzysztof	TP 543	Papasotiriou, Demitrios	ThP 153	Patananan, Alexander N.	ThP 478
Palermo, Giuseppe	WOF pm 2:30	Pappin, Darryl	MP 515	Patankar, Manish	ThP 680
Paley, Martyn	WP 444	Papson, Kaitlin	WP 052	Patel, Chetan B.	TP 545
Palii, Sergiu P.	WP 113	Parchaliuk, Debra	TP 451	Patel, Keyur	WP 601
Palladino, Andrew	WP 689	Parente, Augusto	MP 671	Patel, Mitesh	WP 320
Pallanck, Leo	WP 046	Parikh, Nikunj	ThP 192	Patel, Nisha A.	WP 591
Palma, Paul	WP 138	Paris, Alain	ThP 222	Patel, Paren	ThP 096
Palma, Pierangela	WP 094	Parish, Lindsay A.	ThP 611	Patel, Parul	TP 236
Palma, Pierangela	TP 261	Park, Ben H.	WP 695	Patel, Sajni	ThP 675
Palmlblad, Magnus	WP 653	Park, Chang Hun	WP 132	Patel, Vishal	TOD am 09:50
Palmlblad, Magnus	WP 632	Park, Duhee	ThP 140	Paterson, Patricia	MOG am 08:50
Palmlblad, Magnus	ThP 595	Park, Hyejung	MP 247	Pates, George O.	ThOB pm 3:10
Palmlblad, Magnus	TP 402	Park, Hyun Ju	TP 577	Pathirana, Charles	ThP 105
Palmlblad, Magnus	MP 599	Park, Jongsoo	TP 359	Patick, Jeffrey S.	TP 197
Palmlblad, Magnus	ThP 408	Park, June-Soo	MP 368	Patkar, Kshitij A.	WP 117
Palmlblad, Magnus	MP 444	Park, Kun Wook	WOD am 08:50	Patkin, Adam J.	MP 130
Palmer, Andrew	WP 411	Park, Kyu Hwan	ThP 489	Patkin, Adam J.	ThP 104
Palmer, Martin	MP 059	Park, Kyu Hwan	ThP 072	Paton, Martin	TP 256
Palmer, Martin	ThP 046	Park, Kyu Hwan	ThP 261	Patrick, Jeff	ThP 253
Palmer, Martin	TP 121	Park, Kyu Hwan	WP 030	Patrick, Jeffrey	TP 088
Palmer, Peter T.	TP 040	Park, Kyu Hwan	TP 113	Patrick, Jeffrey	WP 074
Palmeri, Giuseppe	MP 671	Park, Kyu Hwan	WP 353	Patrick, Jeffrey	ThP 302
Palmisano, Giuseppe	MP 486	Park, Melvin A.	MP 054	Patrick, Jeffrey	WP 330
Pamelard, Fabien	TOF pm 2:50	Park, Melvin A.	TP 184	Patrick, Jeffrey	ThP 335
Pamidi, Chinna	ThP 108	Park, Melvin A.	MP 055	Patrick, Jeffrey S.	MP 406
Pamuku, Matt	WP 679	Park, Melvin A.	MP 063	Patrick, Jeffrey S.	ThP 246
Pamuku, Matt	WP 043	Park, Mi-Sun	TP 373	Patrie, Steven	WP 089
Pan, Chongle	ThOC pm 3:50	Park, Sang-Royul	MP 359	Patrie, Steven	ThP 138
Pan, Chongle	MP 532	Park, Sang-Royul	ThP 535	Patrie, Steven	TOG am 08:50
Pan, Chongle	TP 388	Park, Soo Jin	ThP 337	Patt, Joseph	WP 294

INDEX OF AUTHORS

Patterson, Aileen.....	ThP 560	Peng, Wen-Ping	TP 073	Petritis, Konstantinos	MP 686
Patterson, Brad.....	ThOE am 09:10	Peng, Wen-Ping	WOC pm 3:50	Petritis, Konstantinos	MP 679
Patterson, Bruce.....	TP 670	Peng, Ying.....	TOE pm 2:50	Petrochenko, Evgeniy.....	ThP 560
Patterson, Melanie J.....	WP 262	Pennathur, Subramaniam	TP 199	Petrochenko, Evgeniy V.....	TOD am 08:30
Patterson, Melanie J.....	ThP 624	Pennathur, Subramaniam	ThP 672	Petrochenko, Evgeniy V.....	MP 607
Paul, Sylvianne	MP 554	Penner, Natalia	MOF pm 2:50	Petrov, Alexey	TP 554
Paulo, Joao.....	WP 659	Penner, Natalia	WP 280	Petrovic, Michel.....	WOF pm 2:30
Paulovich, Amanda	WP 512	Pennington, Justin.....	WOF pm 3:10	Petter, Russell.....	ThP 185
Paulovich, Amanda	WP 513	Pennington, Stephen.....	TP 660	Pettersson, Curt	WP 314
Paulovich, Amanda	MP 679	Pentek, Daniel	ThP 357	Pettibone, John	WP 063
Paulovich, Amanda	ThP 684	Pentek, Daniel	MP 350	Petucci, Chris	MP 046
Paulovich, Amanda	WP 507	Pentek, Daniel	WP 328	Petucci, Chris	MP 313
Paulovich, Amanda	MP 656	Perala, Adam	TP 321	Petukhova, Valentina	WP 240
Paulovich, Amanda	TP 688	Perdivara, Irina	ThP 565	Petyuk, Vlad	MP 590
Paulovich, Amanda	WP 390	Perecin, Felipe	ThP 289	Petzold, Georg	WP 702
Paulus, Aran.....	MP 216	Pereira, Luisa.....	MP 580	Petzold, Shirley J.....	ThP 653
Pav, Joseph.....	WP 131	Pereira, Michelle Bueno de Moura.....	WP 573	Pevzner, Pavel	MP 498
Pavageau, Marie-Pierre	WP 079	Pereira, Rosana C.L.	TP 306	Pevzner, Pavel	MP 456
Pawar, Harsh	ThP 696	Pereira, Rosana Cardoso Lopes.....	ThP 339	Pevzner, Pavel	ThOA am 09:30
Paweletz, Cloud	MP 667	Pereira, Rosana Cardoso Lopes.....	TP 291	Pevzner, Pavel	ThP 405
Pawliszyn, Janusz.....	ThP 130	Perera, Ann	MP 184	Pevzner, Pavel	MP 441
Pawliszyn, Janusz.....	ThP 125	Perera, Lalith.....	ThP 565	Pevzner, Pavel	MP 458
Pawliszyn, Janusz.....	WOF am 09:30	Perez, Donald	TP 393	Pevzner, Pavel	ThP 331
Pawliszyn, Janusz.....	ThP 131	Perez Hurtado, Pilar.....	ThP 480	Pevzner, Pavel A.	ThP 330
Pawliszyn, Janusz.....	ThP 200	Pergantis, Spiros A.	WP 540	Pezzuto, John M.	WP 274
Pawliszyn, Janusz.....	ThP 126	Perkins, George	ThP 097	Pfannkoch, Ed	ThP 132
Pawson, Tony	ThP 406	Perkins, John R.	ThP 163	Pfuetzner, Richard A.	WP 588
Pawson, Tony	WP 527	Perkins, Patrick D.	MP 231	Phadke, Gayatri	MP 333
Pawson, Tony	WP 706	Perkins, Patrick D.	MP 426	Phadnis, Ruta	WP 143
Pawson, Tony	TOA am 09:50	Perkins, Patrick D.	WP 505	Pham, Hung Anthony	MP 090
Pawson, Tony	MP 202	Perkins, Simon.....	MP 580	Pham, Huong T	ThOB pm 3:30
Payagala, Tharanga	MP 169	Perlman, David H.	TP 653	Pham, Kimberly.....	ThP 523
Payne, Angela.....	ThP 634	Perlman, David H.	TP 443	pham, Roger.....	WP 143
Payne, Leonard.....	ThP 346	Pervinova, Irina	ThP 359	Pham, Roger.....	TP 281
Payne, Lori.....	ThP 110	Pérot, Marie.....	ThP 447	Pham, Victoria	WP 619
Payne, Richard J.	ThP 566	Perreault, Helene	TP 513	Pham Thu, Huong.....	MP 243
Peacock, Kyle	TP 168	Perreault, Helene	ThP 569	Pham Thu, Huong.....	TOC pm 3:10
Peacock, Samantha	TP 546	Perreault, Helene	WOD am 09:50	Pham Tuan, Hai	MP 321
Peake, David	ThOG am 08:30	Perrera, Valentina	WP 185	Pham Tuan, Hai	TOG am 10:10
Peake, David	ThP 251	Perry, Richard	TP 303	Phan, Samantha.....	ThOF am 08:30
Pearson, Terry	WP 506	Perry, Richard H.	TP 046	Phan, Trang.....	TP 339
Pearson, Terry	TP 688	Persicke, Marcus	TP 195	Phan, Trang.....	TP 338
Peay, Kabir G.	MP 292	Persike, Markus.....	TP 361	Phanstiel, Doug.....	TP 461
Pechan, Tibor	WP 501	Person, Jonathan.....	TP 048	Phanstiel, Douglas H.	TOE pm 3:10
Pechenick, Dov	MOA am 09:30	Peru, Kerry M.	MP 363	Philip, Ramila	TP 457
Pecka, Jason	ThP 692	Peter, Gary.....	ThP 441	Phillips, Lawrence R.	WP 118
Peddicord, Michael.....	MP 081	Peter, Jonathan.....	ThP 267	Philogene, Helene.....	ThP 556
Peddicord, Michael.....	ThP 105	Peter, Raimund	TP 250	Phinney, B.S.....	ThP 608
Peddio, Giuseppe	ThP 179	Peter, Raimund	TP 080	Phinney, Brett.....	Special 002
Pei, Hua.....	WP 221	Peterman, Scott	MP 666	Phinney, Brett S.	MP 535
Peischl, Jeff	MP 109	Peterman, Scott	TP 603	Phinney, Karen	WP 290
Pekar, Jennifer.....	MP 264	Peterman, Scott	TP 103	Phinney, Karen	TP 677
Pekcan, Mert	ThP 685	Peters, Jan-Michael.....	WP 702	Phinney, Karen	WP 291
Pekcan, Mert	TP 689	Peters, Jonathan	WP 032	Phinney, Karen	TP 508
Pekol, Teresa.....	TP 260	Peters, Julian	ThP 267	Phinney, Karen	MP 206
Pellerin, Brigitte	TP 257	Petersen, Catherine E	WP 233	Phipps, Elena	ThP 332
Pelletier, Nathalie.....	TP 273	Petersen, Dennis	WP 500	Phu, Lilian	ThP 501
Pelletier, Nathalie.....	ThP 469	Petersen, Dennis	ThP 493	Phung, Jenny	TP 010
Pelletier, Nathalie.....	WP 146	Petersen, Dennis	TP 323	Phung, Qui	ThP 656
Pellitteri-Hahn, Molly.....	WP 709	Peterson, David	ThP 316	Pi, Na	TP 684
Pellitteri-Hahn, Molly.....	ThP 619	Peterson, Jonathan	MP 693	Pi, Na	TP 242
Pelosi, Ludovic.....	TP 572	Peterson, Stephen	MP 552	Piao, Shengfu	ThP 693
Pence, Lisa.....	WP 229	Petersson, Fredrik	ThP 049	Picard, Pierre	WOF am 10:10
Pence, Lisa.....	WP 664	Petitte, James.....	WP 236	Picard, Pierre	ThP 215
Peng, Hong	MOA pm 3:50	Petitte, James.....	WP 643	Picard, Pierre	WP 137
Peng, Ivory	TP 006	Petitte, James N.	TP 610	Picard, Pierre	WP 079
Peng, Jun.....	MP 337	Petre, Brindusa - Alina	ThP 665	Picard, Pierre	WP 144
Peng, Junmin.....	WP 393	Petre, Brindusa-Alina	MP 414	Picaud, Sarah	MOB pm 4:10
Peng, Kuanwei.....	ThP 175	Petreas, Myrto	MP 368	Pichler, Peter	WP 702
Peng, Kuan-Wei	WP 240	Petricoin, Emanuel.....	WP 602	Pichler, Peter	WOA pm 3:30
Peng, Li	WP 571	Petritis, Konstantinos	TP 701	Pick, Chaim	ThP 272
Peng, Lijuan	MP 680	Petritis, Konstantinos	TP 683	Pickup, Barry T.	ThP 002
Peng, Liming	MP 190	Petritis, Konstantinos	WP 394	Pickup, Kathryn.....	TP 250
Peng, Ling.....	ThOC am 09:30	Petritis, Konstantinos	TP 600	Pickup, Kathryn J.	WP 413
Peng, Li-Wen.....	WP 654	Petritis, Konstantinos	ThP 204	Pico, Yolanda.....	MP 242
Peng, Wen-Ping	MP 548	Petritis, Konstantinos	MP 670	Picotti, Paola.....	TOA pm 4:10
Peng, Wen-Ping	WP 543	Petritis, Konstantinos	ThP 212	Picotti, Paola.....	WP 505

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Picotti, Paola	ThP 462	Poliakov, Anton	MOE pm 3:10	Preckel, Tobias	TP 511
Pieber, Thomas R.	WP 149	Poliakov, Anton	WP 405	Premisler, Thomas	ThP 466
Pieper, Joel	MP 323	Politis, Argyris	WOB pm 2:50	Prenni, Jessica	ThP 257
Pierce, Carrie	TP 585	Pollack, Ilana	MP 109	Prenni, Jessica E.	TP 609
Pierce, Carrie	ThOC pm 2:30	Pollins, Alonda C	WP 448	Prentice, Andrew M.	MP 275
Pierce, Michael	ThP 476	Polman, Katja	MP 444	Prentice, Boone	TOE pm 3:30
Pierre-Olivier, Schmit	TP 552	Polovkov, Nikolai	TP 340	Prentice, Boone	ThP 541
Pietsch, Bernhard	TP 349	Polpitiya, Ashoka D.	WP 394	Press, Barry	ThP 187
Pilau, Eduardo J	ThP 289	Polpitiya, Ashoka D.	TP 683	Prest, Harry	MP 404
Pillai, Sasi	MP 334	Polpitiya, Ashoka D.	MP 686	Prestegard, James H.	TOD am 09:30
Pilo, Alice	MP 054	Polpitiya, Ashoka D.	MP 670	Preston, Ryan	TP 158
Pineau, Charles G.	TP 403	Pols, Joanna	ThOF pm 2:30	Prestwich, Erin	WP 676
Pineda, Yosip	WP 679	Polyakova, Olga	TOB pm 3:10	Preud'homme, Hugues	TP 294
Pinhancos, Rebeca	WP 312	Pomerantz, Steven C.	MP 201	Preud'homme, Hugues	MP 303
Pinkse, Martijn	MP 533	Pomerantz, Steven C.	WP 631	Prevelige, Peter	MOB am 09:50
Pinnick, Veronica	ThP 027	Pomerantz, Steven C.	TP 485	Previs, Stephen	TP 693
Pinnick, Veronica	MP 067	Pomerantz, Steven C.	WOG am 08:30	Previs, Stephen	WP 665
Pinnick, Veronica	ThP 074	Pomin, Vitor H.	WOD pm 3:10	Previs, Stephen	ThP 533
Pinto, Ernani	TOB am 09:50	Pompach, Petr	ThP 579	Previs, Stephen	WP 561
Pinto, Sneha M.	ThP 689	Ponnala, Lalit	MOE pm 3:10	Prey, Joshua	WP 129
Pipkorn, Ruediger	WP 575	Ponnala, Lalit	WP 405	Prey, Joshua	WP 130
Piquet, Nicolas	TP 277	Ponthus, Jeremie	TP 298	Pribil, Patrick	MP 421
Piquette-Miller, Micheline	WP 250	Ponthus, Jeremie	TP 299	Pribil, Patrick	MP 419
Piras, Cristian	MP 534	Pope, Matt	WP 506	Price, Lance	TP 600
Piras, Graziella	ThP 657	Pope, Matthew	TP 688	Price, William D.	WP 036
Pirillo, Paola	WP 227	Popot, Marie-Agnes	ThP 222	Pricl, Sabrina	ThOC am 09:30
Pirkle, James	TP 585	Popov, Alexander	ThP 020	Priebe, Waldemar	MP 287
Pirman, David A.	ThP 426	Popov, Igor	ThP 479	Priest, Thomas	WOC pm 3:10
Pirro, Valentina	TP 326	Popov, Igor	MP 010	Prieto Conaway, Maria C.	WP 424
Pirro, Valentina	TP 315	Popov, Igor	ThP 359	Prieto Conaway, Maria C.	WP 323
Pisa, Libor	MP 209	Popov, Igor	ThP 669	Prieto Conaway, Maria C.	WP 310
Pisek, April	ThP 404	Porcari, Andréia M.	ThP 289	Prince, Peter	MP 633
Pitcher, Austin	ThP 612	Porcari, Andréia M.	MP 041	Pringle, Steven D.	MOB am 10:10
Pittau, Barbara	ThP 179	Porrini, Massimiliano	ThOE pm 3:50	Prinz, Mechthild	ThP 372
Pituch, Katarzyna	ThP 292	Porstmann, Thomas	TP 698	Prinzhorn, Heinrich	ThP 667
Pizarro, Ana	TP 561	Porta, Tiffany	ThP 379	Prior, David	ThP 033
Pizzala, Hélène	TP 013	Portegeijs, Vincent	TP 549	Pritz, Elisabeth	WP 149
Plange-Rhule, Jacob	TOB pm 3:50	Porter, Forbes D.	ThP 690	Priya, Ranjan	MOE pm 3:30
Plank, Heather	WP 238	Porter, Kathlyn M.	MP 664	Priyasantha, Kandalama	MP 652
Plante, Véronique	MP 336	Porter, Kathlyn M.	MP 657	Prokai, Laszlo	TP 608
Plasencia, Manolo D.	ThP 653	Portwood, David	WP 287	Prokai, Laszlo	TP 396
Plassmeier, Jens	TP 195	Possi-Pezzali, Tania	WP 096	Prokai-Tatrai, Katalin	TP 608
Plath, Kathrin	TP 428	Post, Alexander	ThP 540	Proost, Pascale	TP 222
Plath, Kim B.	WP 098	Post, Jeremy	WP 431	Prosser, Simon J.	ThOE am 09:30
Plath, Kim B.	MP 183	Post, Jeremy	ThP 272	Proteau, Rosita	WP 349
Plath, Kim B.	ThP 318	Post, Jeremy D.	TP 140	Proulx-Bonneau, Sébastien	MP 336
Plattner, Sabine	WP 189	Post, Susan	TOG pm 3:10	Provencher, Gilles	TP 269
Plazas-Mayorca, Mariana D.	MP 470	Poth, Aaron	MP 582	Provost, Elayne	TP 638
Pletnev, Alexandre	MOA am 09:30	Poth, Aaron	ThP 331	Pruett, Sarah	ThP 182
Plewa, Michael	TOB am 08:30	Potier, David N.	WP 636	Pruell-Janssen, Mehdi	WP 549
Plows, Fiona	ThP 149	Pottiez, Gwenael	WP 568	Przyborowska, Anna M.	TP 364
Plows, Fiona	MP 577	Potts, Caelin	ThP 503	Przyborski, Stefan	MP 506
Plumb, Rob	ThOG am 09:10	Poulsen, Jon Wriedt	WP 698	Przybylski, Cédric	WP 549
Plumb, Rob	TP 243	Pouponneau, Karinne	TP 363	Przybylski, Michael	MP 414
Plumb, Rob	ThP 107	Powell, David	ThP 236	Przybylski, Michael	WP 605
Plumb, Robert	ThP 112	Powell, David H.	ThP 238	Przybylski, Michael	TOF am 08:30
Plumb, Robert	WP 270	Powell, David H.	ThP 144	Przybylski, Michael	ThP 665
Plummer, Chelsea	WP 480	Powell, Kendall	MP 197	Pu, Ling	ThP 457
Poad, Berwyck	TOC pm 3:10	Powell, Matthew	TP 423	Pudenz, Marcos A.	TP 306
Poad, Berwyck L J	ThOB pm 2:50	Power, Michael	MP 277	Pugh, Michael	WP 135
Poch, Gregory	WP 097	Pozmogova, Galina E.	WP 183	Pui-Kin, So	WP 360
Pock, Katharina	MP 291	Pozmogova, Galina E.	WP 192	Puppione, Donald	TP 555
Podagatlapalli, Ravi K.	ThP 108	Pradeep, T.	MP 113	Purdy, David	TP 141
Podar, Mircea	MP 207	Pradeilles, Beatrice	WOF am 10:10	Purdy, David	TP 630
Podgorski, David	ThP 354	Prassman, Jeremy	ThP 476	Purdy, Justin	TP 563
Podgorski, David C.	TOB pm 3:30	Prakash, Amol	WP 602	Purkayastha, Babu	WP 674
Podtelejnikov, Alexandre	TP 399	Prakash, Amol	MP 666	Purkayastha, Subhasish (Babu)	MP 334
Poehler, Thorsten	TP 069	Prakash, Amol	TP 680	Purkerson, Joann	TP 211
Pogliano, Kit	WP 454	Prakash, Amol	TP 603	Purkerson, Joann	WP 617
Pohida, Thomas	TP 634	Prakash, Amol	TP 103	Purkerson, Joann	TP 210
Polasek, Miroslav	WP 061	Prakash, Aruna	MP 126	Purves, Randy W.	ThP 232
Polce, Michael J.	WP 111	Prakash, Chandra	MOF pm 2:50	Purves, Randy W.	MP 233
Polfer, Nicolas	WP 498	Prakash, Chandra	WP 280	Puskas, Judit E.	TP 329
Polfer, Nicolas	MP 521	Pramanik, Birendra	TP 084	Pyle, Margaret	TP 645
Polfer, Nicolas	ThP 054	Prasad, Satendra	MP 056	Pyreddy, Swetha	TP 522
Polfer, Nicolas	ThOB am 10:10	Prasain, Jeevan K.	WP 678	Pyreddy, Swetha	ThP 574
Polfer, Nicolas	ThP 007	Pratt, Brian S.	ThP 386	Qazi, Shefah	WP 537

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Qi, Lining	WP 599	Rajagopalan, Sudha	ThP 696	Rasmussen, Morten	WP 571
Qi, Ming	WP 272	Rajagopalan, Sudha	TP 699	Rasmussen, Morten	TP 377
Qi, Wei	TP 254	Rajagopalan, Sudha	TP 201	Rastogi, Neha	WP 708
Qi, Yulin	MP 084	Rajagopalan, Sudha	ThP 697	Rastogi, Neha	MP 516
Qian, Jie	ThP 106	Rajala, Jonathan	TP 333	Ratchford, John	TP 690
Qian, Jingru	WP 470	Rajamohan, Francis	TP 479	Rath, Christopher M	WP 350
Qian, Kuangnan	TP 286	Rajamohan, Francis	TP 110	Rathbone, G. Jeffery	ThP 076
Qian, Kuangnan	TP 288	Raju, Shruti	MP 186	Rathur, A. I.	ThP 003
Qian, Mark G.	TP 256	Ralhan, Ranju	MP 688	Rau, Nathan	WP 048
Qian, Wei-Jun	TP 673	Ralph, John	TP 192	Raught, Brian	ThP 406
Qian, Xiaohong	MP 477	Ralston, Robin	MP 325	Rauh, Manfred	TOG am 10:10
Qiao, Hui	ThP 040	Ramachandran, Abhihit	MP 178	Rauschenbach, Stephan	WOC pm 4:10
Qin, Feng	TOB am 10:10	Ramagiri, Suma	ThOG am 08:50	Rauser, Sandra	TP 403
Qin, Jun	WP 522	Ramagiri, Suma	WP 092	Ravikumar, Raju	TP 622
Qin, Jun	MOA am 08:50	Ramagiri, Suma	WP 299	Ravipaty, Shobha	MP 540
Qin, weije	ThP 436	Ramagiri, Suma	MOF pm 3:30	Ravnsborg, Christian	ThP 401
Qin, Weijie	MP 477	Ramagiri, Suma	MP 146	Ravnsborg, Christian	MP 225
Qiu, Xi	WP 252	Ramagiri, Suma	MP 145	Rawlins, Mitchell	MP 463
Qiu, Xi	WP 152	Ramagiri, Suma	TP 219	Rawlinson, Catherine	ThP 284
Qu, Jun	MP 591	Ramagiri, Suma	MOF am 08:50	Rawlinson, Catherine	WP 232
Qu, Jun	ThP 599	Ramagiri, Suma	ThP 187	Rawlinson, Catherine C.	ThP 225
Qu, Jun	ThP 678	Ramagiri, Suma	WP 344	Ray, Andrew D.	TP 134
Qu, Jun	ThP 674	Ramamoorthy, Ayyalusamy	WOB pm 3:30	Ray, Bridgette N.	ThP 526
Qu, Jun	WP 467	Raman, Krishna	MP 260	Ray, Gene	TP 279
Qu, Jun	ThOF pm 3:10	Ramanathan, Dil	WP 315	Ray, Gene	ThP 183
Qu, Jun	MOG am 10:10	Ramanathan, Dil	WP 282	Ray, Kevin	ThP 465
Quadri, Syeda S.	MP 544	Ramanathan, Dilrukshi	TP 216	Rayaprolu, Vamsee	MOB pm 3:50
Quan, Quan	WP 485	Ramanathan, Ragu	WP 092	Rayavarapu, Sree	TP 655
Quan, Quan	WP 484	Ramanathan, Ragu	MOF pm 3:30	Rayford, Robert	MP 526
Quang, Changyu	WP 670	Ramanathan, Ragu	MOF am 08:50	Rayman, Joseph B.	ThP 683
Quazi, Shakey	TP 228	Ramanathan, Ragu	TP 092	Raymond, Philippe	MP 554
Quiason, Cristine	WP 418	Ramanathan, Dilrukshi	WP 312	Raynaud, Florence	TP 265
Quinkert, Zachary	WP 544	Ramautar, Ravi	TOG pm 4:10	Raynaud, Florence	WP 224
Quinn, Jeffrey	ThP 193	Ramireddy, Rajasekharreddy	MP 655	Razavi, Morteza	WP 506
Quinn, John Paul	MP 087	Ramirez, Cesar E.	MP 374	Razumovsky, Jane	MP 576
Quinn, John Paul	MP 086	Ramirez, Cesar E.	MP 373	Ready, Damien	WP 262
Quinn, Kevin	ThP 312	Ramirez, Cesar E.	MP 372	Rebecchi, Kathryn	ThP 586
Quinones, Mariam	MP 677	Ramisetty, Sreenivasa Rao	WP 468	Rebuffat, Sylvie	ThP 447
Quinto, Amanda	ThP 382	Raml, Reingard	WP 277	Reckow, Stefan	ThOA pm 2:50
Quinton, Loic	TP 155	Ramos, Alexis	MP 640	Redding, Brian	TP 102
Quinton, Loic	MP 604	Ramsay, Carol	MOG pm 3:10	Redding-Johanson, Alyssa	ThP 344
Quirk, Roderic P.	TP 347	Ramsey, J. Michael	TOG pm 3:50	Reddy, Christopher	ThP 354
Quong, Andrew	TP 455	Ramsey, J. Michael	ThP 030	Reddy, Pranhitha	ThP 644
Raber, Georg	WP 277	Ramstein, Philippe	TP 220	Reddy, Sharanya	ThP 104
Rabinovitch, Peter	WP 046	Ramu, Kumar	WP 238	Reddy, Sharanya	MP 130
Radabaugh, Melissa	ThP 465	Ramu, Kumar	WP 239	Reddy, Yugandhar	TP 699
Radabaugh, Timothy	WP 657	Ramu, Kumar	TP 240	Reddy, Yugandhar	TP 201
Rader, Jeanne	MP 416	Ran, Xiaorong	WP 685	Redon, Sébastien	WOE pm 3:10
Räder, Hans Joachim	TP 262	Ranasinghe, Asoka	MOF am 08:50	Reece, Jennifer	WP 022
Radford, Sheena E.	ThP 671	Rand, Kasper	WP 559	Reece, Jennifer	ThP 347
Radi, Kristzina	WP 591	Rand, Kasper D.	MOB am 10:10	Reed, Ralph	WP 349
Radici, Lucia	WP 094	Randall, Arlo	TOD am 09:50	Rees, Jon	MP 392
Radivojac, Predrag	WP 397	Randall, Kristen L.	MP 153	Rees, Jon	ThOC pm 2:30
Radtke, Anngret	TP 615	Randall, Shan M.	TP 527	Réfrégiers, Matthieu	WP 025
Raether, Oliver	TP 099	Rands, Anthony	MP 083	Réfrégiers, Matthieu	ThP 491
Raether, Oliver	MP 408	Rangiah, Kannan	WP 686	Refsgaard, Jan	WP 571
Rafferty, Daniel	TP 010	Rangiah, Kannan	ThOF pm 2:50	Regg, Brian T.	WP 355
Raffin, Peter	ThP 034	Rannulu, Nalaka	MP 537	Regiani, Thais	WP 020
Rafferty, Daniel	WP 216	Rannulu, Nalaka S.	MP 246	Regiani, Thais	MP 040
Rafferty, Mark J.	MP 583	Ranshaw, Lisa	WP 412	Regnier, Fred	ThP 567
Rafferty, Mark J.	TP 534	Rao, Balaji	TP 527	Regnier, Fred	TP 521
Raghavan, Nirmala	MOF am 08:50	Rao, Balaji M.	MP 519	Regnier, Fred	TOG am 08:30
Raghavan, Nirmala	MOF pm 3:30	Rao, Narsing	TP 616	Regnier, Fred	MP 668
Raghuvaran, Vanaja	WP 344	Rao, Prahlad	TP 618	Rehulka, Pavel	MP 489
Rahal, Rami	MP 330	Rappold, Brian	WP 105	Reich, Jeff	TP 336
Rahavendran, Ravi	ThP 102	Rappold, Brian	TOG am 09:50	Reichmann, Dana	MP 605
Rahman, A. F. M. Motiur	TP 045	Rappsilber, Juri	MP 524	Reid, Gavin E.	MOC am 09:50
Rahman, G. M. Mizanur	WP 043	Rardin, Matthew	WP 465	Reid, Gavin E.	WP 026
Rahman, Mizanur	TP 366	Rasche, Florian	TOC am 08:30	Reid, Jennifer D.	WP 597
Raidas, Shivkumar	TP 119	Rasche, Florian	WP 366	Reilly, James P.	TOE pm 2:30
Rainer, Paaper	MP 506	Rasche, Florian E.	TP 208	Reilly, James P.	TP 469
Rainger, Ed	TP 414	Raska, Milan	TP 509	Reilly, James P.	WP 585
Rainville, Paul	ThP 112	Raskin, Ilya	ThP 334	Reilly, James P.	MP 563
Rainville, Paul	TP 243	Raskind, Alexander	TOC am 10:10	Reilly, James P.	ThP 043
Rainville, Paul	ThOG am 09:10	Raskind, Alexander	ThP 221	Reilly, James P.	WP 584
Rainville, Paul	WP 270	Raskind, Alexander	MP 314	Reilly, James P.	MP 540
Rainville, Paul	ThP 107	Rasmussen, Angela L.	ThP 255	Reilly, Peter T. A.	ThP 059

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Reilly, Peter Ta	ThP 048	Richards, Harry	MP 449	Robinson, Errol	MP 099
Reily, John F.	MP 667	Richards, Harry	ThP 402	Robinson, Errol W.	WOA am 08:50
Reily, Michael	TOC am 10:10	Richards, Ryan	MP 011	Robinson, Errol W.	TP 673
Reily, Michael	MP 314	Richardson, Brenna	MP 593	Robinson, Michelle	ThP 451
Reimer, Janice	MP 228	Richardson, Brenna	MP 232	Robinson, Rena A. S.	TP 606
Reimer, Toralf	TP 615	Richardson, Brenna M.	MP 483	Robinson, Rena A. S.	WP 641
Reindl, Wolfgang	WP 438	Richardson, Keith	ThP 254	Robinson, Rena A. S.	ThP 630
Reinhart, Peter H.	TP 703	Richardson, Keith	MP 059	Robinson, Rena A. S.	WP 458
Reinherz, Ellis	WP 559	Richardson, Keith	TP 137	Robinson, Zachary	WP 603
Reiter, Lukas	TOA pm 4:10	Richardson, Keith	TP 130	Robotham, Anna	MP 538
Reiter, Lukas	ThP 395	Richardson, Keith	TP 121	Robotham, Scott A.	TP 189
Reitz, Richard	WP 163	Richardson, Keith	TP 001	Rocca, Jorge	ThP 010
Rejtar, Tomas	TP 697	Richardson, Keith	ThOB pm 3:50	Rocca, Jorge J.	MP 018
Relucio, Jenne	TP 631	Richardson, Keith	ThP 021	Rocca, Jorge J.	ThP 445
Remes, Philip M.	TP 460	Richardson, Paul L.	ThP 624	Rocco, Micaela	MP 671
Remes, Philip M.	ThP 050	Richardson, Susan	TOB am 08:30	Rocco, Silvana A.	TP 206
Remes, Philip M.	ThP 454	Richards-Peterson, Lauren	TOF pm 2:30	Rocconi, Rodney P.	MP 289
Remes, Philip M.	ThP 025	Riches, Eleanor	MP 032	Rocha, Sandra	WP 257
Rempel, Don L.	MP 630	Riches, Eleanor	TP 332	Rochat, Bertrand	MP 503
Rempel, Don L.	ThP 665	Riches, Eleanor	WP 317	Rochat, Bertrand	WP 156
Remsburg, Jeffrey W.	MP 169	Richter, Florian	ThOD pm 2:30	Rochefford, Erik	ThP 227
Ren, Da	TP 109	Richter, Florian Martin	WP 185	Rocker, Andrea	MP 010
Ren, Da	TP 111	Ricketts, Claire	WP 018	Rocker, Jana M.	MP 685
Ren, Da	ThP 638	Rico, Estixu	ThOF pm 4:10	Rockman, Howard A.	TP 545
Ren, Jianhua	TP 348	Ridge, Douglas P.	WP 052	Roddy, Thomas	TP 693
Ren, Jianhua	WP 003	Ridgeway, Mark	MP 054	Roddy, Thomas	TP 678
Ren, Jianhua	WP 024	Ridgeway, Mark	ThP 052	Roddy, Thomas	ThP 533
Ren, Ning	MP 171	Riedl, Ken	MP 325	Roddy, Thomas	WP 665
Ren, Yan	WP 470	Rieger, Robert	TP 235	Roddy, Thomas	MP 171
Ren, Yu	MP 265	Riener, Joerg	MP 079	Roden, Dan	WP 157
Ren, Yue	ThP 545	Rinehart, Jesse	TP 568	Rodgers, M. T.	ThP 003
Ren, Yue	MP 009	Rinehart, Jesse	TP 535	Rodgers, Mary	WP 034
Renaud, Justin	WP 057	Ring, Adam	TP 474	Rodgers, Mary T.	ThOB am 09:10
Renahan, Andrew	TP 284	Riniger, Joe	ThP 573	Rodgers, Ryan P.	MP 013
Renfrow, Matthew B.	TP 509	Rinner, Oliver	WP 505	Rodgers, Ryan P.	TP 304
Reniero, Fabiano	WP 227	Rinner, Oliver	ThP 395	Rodgers, Ryan P.	ThP 354
Rentel, Claus	MP 309	Rinner, Oliver	TOA pm 4:10	Rodgers, Ryan P.	ThP 352
Renuse, Santosh	TP 635	Ritchie, Harald	MP 580	Rodgers, Ryan P.	TP 305
Renuse, Santosh	WP 695	Ritchie, Mark	TP 497	Rodgers, Ryan P.	ThP 338
Renuse, Santosh	ThP 697	Ritchie, Mark	ThP 287	Rodgers, Ryan P.	TOB pm 3:30
Renuse, Santosh	TP 638	Ritchie, Mark	ThP 260	Rodgers, Ryan P.	TP 290
Renuse, Santosh	ThP 696	Ritchie, Mark	MP 257	Rodgers, Ryan P.	MOE am 09:10
Renuse, Santosh	TP 622	Riter, Leah	ThP 302	Rodriguez, Alejandra	WP 096
Renuse, Santosh	TP 617	Riter, Leah	ThP 301	Rodriguez, Richar	ThP 595
Reschke, Brent	TP 423	Ritzau, Stephen	ThP 024	Rodriguez-Prados, Juan Carlos	ThP 507
Resemann, Anja	ThP 585	Ritzau, Stephen	MP 095	Rodriguez-Prados, Juan-Carlos	ThP 089
Resemann, Anja	ThOF am 09:50	Rivera, Jeffery	MP 024	Rodriguez-Proteau, Rosetta	ThP 219
Ressom, Habbom	TP 204	Rivera, Jeffrey	ThP 314	Rodriguez-Rivera, Jennifer	TP 605
Retori, Emmamuelle Sales	ThP 339	Rivera, Keith	TP 688	Rodriguez-Suárez, Eva	ThP 614
Retterer, Scott T.	WP 297	Rivera, Keith	WP 507	Rodthongkum, Nadnudda	WP 655
Reuschel, Scott	TP 259	Rivera, Keith D.	WP 523	Roe, Mikel R.	MP 335
Reuschel, Scott	ThP 470	Rizshsky, Ludmila	ThP 230	Roe, Mikel R.	TP 193
Revell, Victoria	WP 224	Rizshsky, Ludmila	MP 184	Roede, James	TP 323
Rey, Martial	TP 500	Rizzo, Thomas	MOC pm 3:10	Roede, James	TP 095
Rey, Martial	TP 572	Ro, Grace	MP 694	Roehr, Nathan	ThP 054
Reynolds, James	ThP 037	Roach, Lucy	WP 546	Roehring, Cornelia	MP 321
Reynolds, James C.	TP 134	Roach, Patrick	MP 542	Roewer, Claudia	TP 615
Reynolds, Susan D.	MP 255	Roach, Patrick	ThOC pm 3:10	Rogalski, Jason	ThP 448
Reyzer, Michelle L.	WP 447	Roach, Patrick	MOD am 09:10	Rogalski, Jason	WP 456
Reyzer, Michelle L.	ThP 438	Roark, Joseph	MP 426	Rogatsky, Eduard	MP 353
Reyzer, Michelle L.	WP 414	Rob, Tamanna	WP 564	Rogers, Duane A.	MP 360
Rezabkova, Lenka	TP 476	Robb, Damon	ThP 448	Rogers, John	MP 666
Rezai, Taha	TP 103	Robb, Damon	WP 456	Rogers, John C.	MP 213
Rezai, Taha	WP 602	Robbins, Gordon	WP 392	Rogers, John C.	WP 615
Rhee, Yoon	MP 553	Robbins, Ronny	WP 200	Rogers, John C.	TP 452
Rhoads, Timothy	MP 622	Roberson, Kevin	MP 645	Rogers, John C.	ThP 584
Rhodes, Denise	MP 553	Roberson, Kevin	ThP 539	Rogers, John C.	TP 538
Rhodes, Gerry	MP 175	Roberts, Gordon C.K.	ThP 559	Rohde, Ellen	ThP 193
Rhodes, Justin	TP 696	Roberts, James M.	MP 109	Rohlf, Rebecca	MP 306
Ricart, Carlos André O.	MP 615	Roberts, John	TP 241	Rohlin, Lars	MP 537
Richa, Latifa	WP 517	Roberts, Lawton	TP 544	Rohm, Rory	WP 665
Richardin, Pascale	WP 407	Robichaud, Guillaume	MP 012	Rohm, Rory	MP 171
Richards, Alicia	ThP 545	Robinson, Carol	TOD pm 3:50	Rohm, Rory	ThP 533
Richards, Alicia	MP 009	Robinson, Carol V.	WOB pm 2:50	Rohmer, Marion	ThP 578
Richards, Alicia L.	MP 265	Robinson, David	TP 348	Rohmer, Marion	TP 578
Richards, Alicia L.	MP 597	Robinson, Errol	TP 450	Röhring, Cornelia	TOG am 10:10
Richards, Harry	ThP 385	Robinson, Errol	MOD am 09:30	Rohrs, Henry W.	TP 540

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Rohrs, Henry W.	ThP 653	Rowles, Daniell L.	MP 620	Russell, Jason D.	MP 572
Rojas-Betancourt, Stella.....	MP 313	Roy, René WP 481	Roy, René MP 336	Russell, Reb J.	ThP 485
Rojisajakul, Teerapat.....	TP 487	Roy, René MP 624	Roy, Sayantan TOE am 08:50	Russell, Scott.....	TP 348
Roland, Olivia MP 679		Roy, Sushmita Mimi.....	ThP 691	Russell, William K.	WP 652
Rolando, Christian WP 517		Royle, Louise MP 291	Rozbesky, Daniel.....	Russell, William K.	ThP 546
Rolando, Christian WP 083		Rozbesky, Daniel.....	ThP 561	Russo, Paul WP 602	
Rolando, Christian WP 640		Rozek, Wojciech.....	WP 568	Rutherford, Becky.....	TP 717
Rolando, Christian TP 627		Rozz, Carla MP 671	Ruan, Ke.....	Rutherford, David.....	ThP 341
Rollins, Christopher WP 044		Ruan, Qian ThP 198	Ruan, Qian ThP 639	Rutishauser, Dorothea.....	WP 388
Romanelli, Anthony ThP 096		Rubakhin, Stanislav ThP 152	Rubakhin, Stanislav ThP 239	Rutishauser, Dorothea.....	TP 659
Romanelli, Anthony ThP 213		Rubakhin, Stanislav ThP 416	Rubakhin, Stanislav S.	Ruvalcaba, Blanca.....	ThP 344
Romano, Patrick.....	MP 662	Rubbiani, Riccardo.....	TP 106	Ruzicka, Josef.....	MP 381
Romanov, Victor I.	TP 322	Rubel, Edwin TOA pm 3:30	Rubio-Aparicio, Debora MP 551	Ruzicka, Josef.....	ThP 240
Romanov, Vladimir ThP 017		Rucevic, Marijana ThOF pm 3:50	Ruch, David.....	Ryals, John.....	WP 681
Romanova, Elena TP 696		Rudd, Pauline ThP 564	Rudd, Pauline M.	Ryan, Christopher.....	TP 555
Romantseva, Eugenia TP 634		Rudd, Pauline M.	MP 283	Ryan, Christopher M.	WOA am 08:30
Romkes, Marjorie.....	MP 331	Ruddy, Brian MP 086	Ruddy, Brian M.	Ryan, Elizabeth.....	ThP 257
Romm, Michelle ThP 192		Rudewicz, Patrick J.	MOF am 10:10	Ryan, John D.	ThP 088
Romm, Michelle WP 162		Rudewicz, Patrick J.	ThOE am 09:30	Rychnovsky, Scott.....	TOD am 09:50
Romm, Michelle ThP 214		Rudewicz, Patrick J.	WOG pm 3:30	Rydzak, Tom ThP 350	
Romm, Michelle WP 161		Rudney, Joel.....	TP 398	Rydzak, Tom TP 718	
Römpf, Andreas ThOE am 10:10		Rudnick, Paul.....	WP 635	Ryerson, Thomas B.....	MP 109
Römpf, Andreas MOD am 09:50		Rudnick, Paul.....	MP 431	Rynkiewicz, Michael.....	WOD am 08:30
Roncada, Paola MP 534		Rudnick, Paul.....	WP 291	Ryona, Imelda.....	ThP 310
Rooney, Madeleine TP 660		Rudnick, Paul.....	TOA pm 2:30	Ryumin, Pavel.....	ThP 060
Roper, David WP 589		Rudnick, Paul.....	WP 378	Ryzhov, Victor ThP 005	
Rosano, Thomas ThOF am 09:30		Rudnick, Paul.....	MP 206	Ryzhov, Victor MOC pm 2:50	
Roschitzki, Bernd WP 388		Rudy, Jeffrey ThP 374	Ruff, Matthias.....	S. K, Shankar ThP 697	
Rose, Chris.....	ThOE am 08:50	Ruff, Matthias.....	MP 385	S. K, Shankar ThP 696	
Rose, Christopher M.	ThP 522	Ruffin, Mack TP 525	Ruhaak, L. Renee TP 161	Sa, Gilberto TP 139	
Rose, Jocelyn TP 519		Ruhs, Aaron MP 509	Ruhs, Aaron MP 509	Sa, Gilberto TP 150	
Rose, Kristie TP 676		Rumbelow, Stephen.....	WP 116	Saang'onyo, Daudi ThP 351	
Rose, Kristie Special 002		Rumi-Masante, Julie.....	TP 495	Saba, Julian.....	TP 451
Rose, Kristie L.	TP 566	Rummel, Michael.....	TP 314	Saba, Julian.....	WOD am 09:50
Rose, Rebecca WP 534		Runco, Jacquelyn ThP 319	Running, William TP 469	Saba, Julian.....	TP 170
Rosenblatt, Michael MP 213		Runck, William TP 469	Ruotolo, Brandon WOB pm 3:30	Sabat, Grzegorz TP 623	
Rosenblatt, Michael TP 452		Ruotolo, Brandon ThOB am 08:30	Ruotolo, Brandon TOE am 09:50	Sabel, Michael.....	MP 672
Rosenbusch, Marco.....	MP 108	Ruotolo, Brandon WOB am 09:10	Rusa, Mariana.....	Sabido, Eduard TP 698	
Rosengarten, Rafael TP 717		Ruse, Cristian I.	TP 546	Sachon, Emmanuelle MP 478	
Rosenow, Matthew TP 701		Ruse, Cristian I.	MP 515	Sachsenberg, Timo ThP 410	
Rosenow, Matthew ThP 204		Rush, John ThP 498	Rush, John ThP 493	Sack, Stephan ThP 109	
Rosenwald, Andreas MOD pm 4:10		Rush, John ThP 521	Rusinga, Farai.....	Sacks, Gavin.....	ThP 310
Roskelley, Eric TP 703		Russ, Bill.....	WP 070	Sacktor, Ned.....	ThP 603
Rosnack, Kenneth WP 317		Russell, David.....	TP 286	Sadagopan, Nalini TP 605	
Rosnack, Kenneth TP 094		Russell, David H.	MP 273	Sadilek, Martin.....	MP 332
Ross, Gordon MP 308		Russell, David H.	ThP 558	Sadilek, Martin.....	WP 351
Ross, Helen MP 679		Russell, David H.	WP 495	Sadilkova, Katerina.....	MP 345
Ross, James ThP 681		Russell, David H.	TP 133	Sadjadi, Seyed.....	TP 314
Ross, Mark M.....	WP 570	Russell, David H.	TP 494	Sadler, Peter.....	TP 561
Ross, Nicolette.....	WP 117	Russell, David H.	ThP 546	Sadler, Peter J TP 559	
Rössel Larsen, Martin.....	ThP 401	Russell, David H.	ThP 042	Sadoun, Freddy.....	WP 079
Rössel Larsen, Martin.....	ThP 568	Russell, David H.	ThP 022	Sadoun, Freddy.....	WOF am 10:10
Rossomando, Anthony J.	TP 697	Russell, David H.	MP 050	Sadowski, Pawel.....	TOA am 10:10
Röst, Hannes WP 091		Russell, David H.	ThP 554	Sadula, Sunitha.....	MOE am 09:30
Rostad, Colleen.....	ThP 341	Russell, David H.	TP 492	Sadygov, Rovshan MP 465	
Rostovtsev, Alexander ThP 640		Russell, David H.	MP 487	Sadygov, Rovshan TP 605	
Rosu, Frederic.....	ThOD pm 4:10	Russell, David H.	WP 652	Sadygov, Rovshan WP 569	
Rotello, Vincent.....	ThP 146	Russell, Jason WP 015	Russell, Jason D.	Saed, Ghassan.....	TP 199
Rotello, Vincent M.	ThP 147	Russell, Jason D.	ThP 014	Sagan, Sandrine.....	MP 478
Roth, Johannes MOG pm 3:30		Russell, Jason D.	TP 564	Sage, Ashley TP 134	
Roth, Michael.....	TOG am 08:50			Sagulyenko, Pavel.....	ThP 551
Roth, Michael.....	WP 089			Sagulyenko, Pavel.....	ThP 008
Roth, Michael.....	ThP 138			Sagulyenko, Pavel.....	ThP 001
Roth, Steve ThP 149				Sagulyenko, Paviel.....	ThP 009
Roth, Steve MP 577				Saha, Pratip ThP 137	
Rothman, Richard MP 552				Sahasrabuddhe, Nandini TP 617	
Roumeliotis, Theodoros ThP 676				Sahasrabuddhe, Nandini ThP 697	
Roumi, Marie ThP 196				Sahasrabuddhe, Nandini WP 693	
Rounds, Megan MP 550				Sahasrabuddhe, Nandini TP 635	
Rouse, Jason MP 558				Sahasrabuddhe, Nandini WP 695	
Rousseau, Laurent.....	WOF am 10:10			Sahasrabuddhe, Nandini A.	TP 638
Roussis, Stilianos ThP 344				Sahasrabuddhe, Nandini A.	WP 634
Roux, Aurelie ThOG am 09:50				Sahasrabuddhe, Nandini A.	ThP 689
Roux, Kenneth H.	TP 475			Sahota, Amrik.....	ThP 197
Rover, Marge MOE am 09:30				Saib, Ouarda WP 094	
Röwer, Claudia ThP 520				Saikusa, Kazumi.....	WP 496
Rowland, Megan.....	WP 374			Saito, Kazunori WP 226	

INDEX OF AUTHORS

Saito, Kenichiro	ThP 026	Sandhaas, Anna	TP 318	Savory, Joshua	ThP 354
Saito, Takeshi	WP 215	Sandlers, Yana	ThP 248	Savory, Joshua J.	TP 304
Sajid, Sam	WP 301	Sandoval, Celeste	ThP 233	Savory, Joshua J.	MOE am 09:10
Sajid, Sam	MP 555	Sandoval, John	WOA pm 3:10	Savtchenko, Serguei	TP 060
Sakai, Kiyoshi	TP 196	Sandoval, Wendy	MP 571	Savtchenko, Serguei	ThP 086
Sakai, Mami	TP 052	Sandoval, Wendy	WP 619	Sawada, Hirokazu	WP 225
Sakai, Toshihiro	MP 116	Sandra, Pat	ThP 294	Sawada, Hirokazu	MP 418
Sakai, Toshihiro	MP 117	Sands, Eric	ThP 193	Sawaya, Alexandra	ThP 322
Sakai, Yuji	TP 062	Sandstrom, Mary M.	MP 200	Saxena, Ashok	ThP 139
Sakairi, Minoru	MP 395	Sanduja, Radhika	ThP 108	Sayyarpour, Farhad	WP 670
Sakamoto, Jason H.	MP 673	Sandy, Chris	WP 070	Scalf, Mark	ThP 619
Sakane, Iwao	WP 296	Santagata, Sandro	WP 442	Scalf, Mark A.	WP 709
Sakane, Iwao	WP 285	Santana, Jaime M.	MP 615	Scalf, Mark A.	TP 564
Sakdinawat, Anne	ThP 445	Santasia, Carmen T.	MP 169	Scanlan, Christopher N.	MP 290
Sakdinawat, Anne	MP 018	Santee, Christopher	WP 308	Scarff, Charlotte	ThOC am 08:30
Sakuma, Takeo	WP 221	Santiago, Alex	TP 115	Scarff, Charlotte	MP 039
Sakuma, Takeo	ThP 358	Santini, Robert E.	WOE pm 3:50	Scarff, Charlotte A.	MP 290
Sakuma, Takeo	ThP 314	Santoni, Marie-Pierre	WP 339	Scarff, Charlotte A.	WP 591
Sakuma, Takeo	MP 419	Santos, Alina Mara	WP 574	Schaab, Christoph	ThP 626
Sakuma, Takeo	TP 219	Santos, Eugenio V.	TP 306	Schachner, Helga	ThP 435
Sakuma, Takeo	TP 297	Santos, Ralph	TP 570	Schachter, Joel B.	TP 524
Sakuma, Takeo	WP 344	Santos, Sônia A. O.	ThP 328	Schaefer, Edward C.	TOB pm 2:30
Sakuma, Takeo	ThOG am 08:50	Santoso, Lissya Lettisy	ThP 260	Schaefer, Karl C.	TP 029
Sakuma, Takeo	MP 024	Sanyova, Jana	WP 407	Schaefer, Karl C.	ThOG pm 2:30
Sakuma, Takeo	MP 421	Sap, Karen	TP 714	Schaefer, Karl C.	ThP 393
Sala, Federica	WP 237	Sapp, Lisa	WP 084	Schaefer, Karl-Christian	ThP 443
Salama, Farid	WP 018	Sapp, Lisa	TP 135	Schaefer, Mathias	ThP 002
Salazar, Carolina	ThP 251	Sarangarajan, Rangaprasad	TP 664	Schafer, Barry	TP 565
Salazar, Gary Abdiel	TP 024	Sarangarajan, Rangaprasad	TP 663	Schaff, Jason E.	WP 211
Salbo, Rune	TP 159	Saraswat, Suraj	ThP 474	Schaff, Jason E.	ThP 381
Saldivia, Victor	ThP 130	Sarath, Gautam	MP 293	Schambeau, Lindsay	TP 445
Saldivia, Victor	ThP 131	Saravanamuthu, Guanali	WP 581	Schanen, Pierre	MP 071
Sale, Ken	TP 489	Sarda, Sunil	WP 413	Schantz, Michele	WP 290
Salem, Jr, Norman	MP 260	Sardelis, Diana L.	MP 015	Schänzer, Wilhelm	WP 078
Salih, Bekir	MP 482	Sardis, Marios-Frantzeskos	WP 540	Schärfke, Marco	MP 502
Salinas, Paul	TP 104	Sarg, Bettina	ThP 488	Schaub, Tanner	MOE am 10:10
Salisbury, Joseph	MP 562	Sarg, Bettina	TP 539	Scheffler, Kai	MP 568
Salisbury, Joseph	WP 399	Sarg, Bettina	TP 063	Scheibner, Olaf	WP 156
Salituro, Gino	WOF am 08:30	Sarg, Bettina	TP 429	Scheibner, Olaf	WOG pm 2:50
Salla, Venkatesulu	ThP 423	Sargaeva, Nadezda P.	ThP 477	Scheibner, Olaf	TP 091
Salley, Steve	ThP 346	Sarkar, Arun	TP 240	Scheid, Johannes F.	WOG am 09:50
Salminen, Willie	WP 229	Sarkar, Prasenjit	MP 519	Schellander, Karl	MP 414
Salmon, Elodie	MOE am 09:50	Sarkar, Prasenjit	TP 527	Schellenberg, Jonathan R.	TP 209
Salomon, Karen	ThP 194	Sarracino, David	TP 103	Schelp, Julien	ThP 252
Salomone, Alberto	TP 315	Sarrión, Nieves	MP 344	Scheltema, Richard	TP 706
Salomone, Alberto	TP 326	Sasai, Kohei	ThP 084	Schepmoes, Athena A.	TP 673
Salovska, Barbora	MP 489	Sasaki, Darryl	TP 489	Scherbaum, Ellen	MP 408
Salter, Tara La Roche	TP 030	Sathe, Shridhar K.	TP 475	Scherbaum, Ellen	TP 099
Salter, Tara La Roche	TP 032	Sato, Kimihiko	MP 655	Scherl, Alexander	ThP 390
Saluti, Giorgio	MP 403	Sato, Takafumi	WP 647	Scherl, Alexander	TP 394
Salvador, Arnaud	WOE pm 3:10	Sato, Takafumi	TP 346	Scherl, Alexander	MP 446
Salzet, Michel	ThP 425	Satoh, Takaya	TP 346	Scherp, Peter	TP 614
Salzet, Michel	WP 429	Satomi, Yoshinori	TOC am 10:10	Schetter, Klaus	ThP 208
Salzet, Michel	TOF pm 2:50	Satomi, Yoshinori	MP 314	Scheubert, Kerstin	TP 349
Salzet, Michel	TP 407	Satulovsky, Javier	ThP 641	Scheubert, Kerstin	WP 366
Salzet, Michel	TOF pm 3:50	Satulovsky, Javier	TP 183	Scheubert, Kerstin	TOC am 08:30
Salzet, Michel	MOD pm 3:10	Satulovsky, Javier	MP 426	Schey, Kevin	ThP 432
Samant, Swaroop	MP 297	Satyanarayana, Gouthu	ThP 327	Schey, Kevin L.	MP 217
Samgina, Tatiana	MP 497	Saucier, Cédric	ThP 315	Schey, Kevin L.	TP 676
Saminathan, Irine	ThP 006	Sauer, John-Michael	MOF am 10:10	Schey, Kevin L.	TP 575
Sampaio, Julio	ThP 280	Sauer, John-Michael	WOG pm 3:30	Schieffer, Gregg	WP 431
Sampalis, Tina	WP 146	Sauer, Uwe	TP 716	Schieffer, Gregg M.	TP 140
Sampath, Ranga	MP 551	Saunders, Ken	MP 219	Schiell, John	ThP 649
Sampath, Ranga	MP 424	Saunders, Mary	ThOD am 09:50	Schiell, John	TP 508
Samuelsson, Kristin	TP 250	Sauter, Drew	TP 025	Schier, Joshua	TP 321
Sana, Theodore R.	TP 202	Savage, Andrew J.	MP 394	Schiess, Ralph	MP 690
Sanchez, Carl	TP 314	Savard, Nadia	TP 257	Schiewek, Ralf	MP 001
Sanchez, Laura	TP 041	Savard, Nadia	ThP 469	Schiewek, Ralf	WP 292
Sanchez, Mar	ThP 182	Savaryn, John Paul	WP 616	Schiller, Jürgen	MP 271
Sanchez, Timothy	TP 325	Saveliev, Sergei S.	WP 620	Schilling, Birgit	ThP 512
Sander, Lane	WP 290	Savickas, Philip J.	TP 104	Schilling, Birgit	MP 668
Sander, Peter	TP 318	Saville, Jennifer T.	MP 248	Schilling, Birgit	WP 635
Sanders, Jeff	TP 392	Savitski, Mikhail	WP 486	Schilling, Birgit	WP 459
Sanders, Mark	TP 451	Savitski, Mikhail M.	ThP 616	Schilling, Birgit	TOA am 10:10
Sanders, Mark	ThOG am 08:30	Savory, Joshua	MP 086	Schilling, Birgit	ThP 397
Sanders, Phillip	ThP 262	Savory, Joshua	MP 088	Schilling, Birgit	WP 465
Sanderson, Wayne	ThP 065	Savory, Joshua	MP 087	Schimmel, Paul	TP 496

INDEX OF AUTHORS

Schintu, Nicoletta.....	TP 404	Scholl, Peter F.	MP 412	Schweppe, Devin.....	MOA am 09:30
Schira, Jessica.....	ThP 594	Scholz, Birger.....	MP 505	Schweppe, Devin K.....	MP 680
Schirle, Markus.....	MOA am 09:50	Schoofs, Liliane.....	TP 466	Schwier, Todd.....	WP 119
Schlabach, Tim.....	WP 209	Schorzman, Allison N.....	TP 643	Schwingel, Johanna.....	TP 558
Schlager, John.....	MP 393	Schrader, Wolfgang.....	ThP 347	Schwinn, Marie.....	WP 610
Schlager, John.....	ThP 547	Schrader, Wolfgang.....	TP 285	Schwdudke, Dominik.....	ThP 298
Schlager, John.....	WP 599	Schrader, Wolfgang.....	MOE am 08:50	Scionti, Vincenzo.....	TOE am 08:50
Schlabach, Ralph.....	WP 388	Schrader, Wolfgang.....	TP 293	Sciuto, Stephen.....	WP 533
Schlathoelter, Thomas.....	ThP 064	Schramm, William.....	WOF am 08:50	Scotcher, Jenna.....	TP 559
Schlatzer, Daniela.....	WP 510	Schranz, Urs.....	ThP 208	Scott, April.....	MP 327
Schlatzer, Daniela.....	MP 098	Schreiber, Andre.....	MP 417	Scott, C. Ronald.....	MP 342
Schlatzer, Daniela.....	ThP 679	Schreiber, Andre.....	MP 413	Scott, C. Ronald.....	MP 348
Schlatzer, Daniela.....	TP 705	Schreiber, Andre.....	TP 351	Scott, C. Ronald.....	MP 341
Schlegl, Judith.....	ThP 616	Schreiber, Andre.....	TP 135	Scott, C. Ronald.....	MP 343
Schlessler, Marc.....	MP 679	Schreiber, Andre.....	TP 369	Scott, Colleen.....	TP 470
Schlicht, Kari E.....	WP 160	Schreiber, Andre.....	MP 383	Scott, Franzblau.....	WP 240
Schluchter, Wendy.....	MP 556	Schreiber, Andre.....	ThP 092	Scott, George.....	WP 168
Schluchter, Wendy M.....	ThP 496	Schreiber, Emanuel.....	TP 628	Scott, George.....	TP 060
Schmid, Rudolf.....	ThP 355	Schriemer, David.....	TP 500	Scott, Greg.....	MP 296
Schmid, Stefan.....	MP 366	Schroder, Detlef.....	ThOE pm 2:30	Scott, Hannah C.....	WP 632
Schmidt, Alexander.....	ThOC pm 3:30	Schroder, Jason.....	MP 110	Scott, Lincoln.....	MP 302
Schmidt, Alexander.....	WP 525	Schroeder, Bryce.....	ThP 445	Scott, Mike.....	WP 379
Schmidt, Andreas.....	WOA pm 3:30	Schubert, Birthe.....	WOF pm 2:50	Scrivens, James.....	MP 039
Schmidt, Andreas.....	MOA pm 2:30	Schubert, Ulrich S.....	TP 349	Scrivens, James.....	ThOC am 08:30
Schmidt, Carla.....	MP 636	Schuerch, Stefan.....	ThOD pm 3:10	Scrivens, James.....	TP 644
Schmidt, Dietmar.....	ThP 399	Schuerch, Stefan.....	WP 174	Scrivens, James H.....	WP 591
Schmidt, Eduardo M.....	TP 306	Schuerenberg, Martin.....	WP 629	Scrivens, James H.....	WP 413
Schmidt, Ralf.....	ThP 196	Schüffler, Peter.....	MP 690	Scrivens, James H.....	MP 290
Schmidt, Ronald.....	ThP 399	Schug, Kevin.....	WP 332	Seale, Kevin.....	TP 147
Schmidt, Rudolf.....	ThP 356	Schug, Kevin.....	TP 066	Searle, Brian.....	WP 395
Schmiederer, Diane.....	TOG am 10:10	Schug, Kevin.....	WP 541	Searle, Brian C.....	TP 438
Schmiederer, Diane.....	MP 321	Schug, Kevin.....	ThP 323	Searle, Brian C.....	WP 373
Schmitt, Oliver.....	TP 615	Schug, Kevin.....	ThP 190	Seaton, Barbara.....	WOD am 08:30
Schmitt, Thomas.....	WP 229	Schug, Kevin.....	ThP 016	Seaward, Karen.....	TOG pm 3:10
Schmitter, Jean-Marie.....	MP 237	Schug, Kevin.....	WP 136	Sederoff, Ronald R.....	WP 302
Schmitt-Kopplin, Philippe.....	ThP 256	Schug, Kevin.....	MP 194	Sedransk, Nell.....	TOA pm 2:30
Schmitz, Nicole.....	WP 436	Schug, Kevin.....	MP 154	Sedransk, Nell.....	TOA am 10:10
Schmitz, Oliver J.....	MP 002	Schug, Kevin.....	MP 526	Seeholzer, Steven H.....	ThP 150
Schmitz, Oliver J.....	TP 068	Schug, Kevin A.....	WP 335	Seeley, Erin H.....	WP 437
Schmitz, Oliver J.....	MP 001	Schug, Kevin.....	WP 031	Seeley, Kent.....	WP 457
Schmitz, Oliver J.....	MP 003	Schuhmacher, Rainer.....	MP 423	Sefkow, Michael.....	ThP 613
Schmitz, Thomas.....	MOD am 08:30	Schuhmann, Imelda.....	MOG pm 3:30	Segu, Zaneer.....	ThP 640
Schnabel, Anke.....	MP 523	Schuhmann, Kai.....	WOC am 09:50	Seim, Tom.....	ThP 033
Schnackenberg, Laura.....	WP 229	Schuhmann, Kai.....	MP 436	Seipert, Richard.....	ThP 484
Schneider, Bernd.....	ThP 231	Schulbaum, Paula.....	ThP 324	Seipert, Richard.....	ThOF am 09:10
Schneider, Birgit.....	TP 318	Schulman, Howard.....	ThP 691	Seipert, Richard R.....	WOD am 08:50
Schneider, Brad.....	MP 436	Schultz, Gary.....	MP 657	Sekimoto, Kanako.....	TP 020
Schneider, Brad.....	MP 051	Schultz, Gary A.....	WP 151	Sekine, Yuko.....	TP 343
Schneider, Brad.....	ThP 171	Schultz, Gary A.....	WP 690	Sekiya, Sadanori.....	ThP 629
Schneider, Brad.....	WP 120	Schultz, Gary A.....	MOG pm 2:30	Sekiya, Sadanori.....	ThP 582
Schneider, Brad.....	TP 135	Schultz, Gary A.....	MP 664	Selby, Gary.....	ThP 299
Schneider, Brad.....	WP 214	Schultz, J. Albert.....	TP 140	Selinsky, Cheryl.....	MP 679
Schneider, Bradley.....	MP 058	Schultz, Jo El J.....	ThP 506	Sellami, Lina.....	MP 567
Schneider, Bradley.....	MP 052	Schultz, Loren.....	ThP 634	Selvan, Lakshmi Dhevi.....	TP 635
Schneider, Bradley B.....	WOB am 09:30	Schultze, Kevin.....	ThP 052	Selvan, Lakshmi Dhevi.....	ThP 697
Schneider, Michael.....	ThP 404	Schulz, Melanie.....	ThP 518	Selvapalam, N.....	WP 341
Schneider, Petra.....	TOC am 09:50	Schulz, Melanie.....	MP 486	Selvapalam, N.....	WP 342
Schneider, Richard.....	ThP 195	Schulz-Utermoehl, Timothy.....	WP 413	Semmes, Oliver John.....	MOD am 09:10
Schneider, Richard.....	WOF am 08:50	Schulz-Utermoehl, Timothy.....	WP 269	Senczuk, Anna.....	MP 633
Schneider, Richard.....	WP 276	Schürenberg, Martin.....	MP 407	Senda, Naoto.....	WP 266
Schneider, Richard.....	ThP 191	Schürenberg, Martin.....	ThP 430	Senftle, Thomas.....	WP 063
Schnieder, Brad.....	MP 037	Schuster, Stephanie.....	MP 220	Senior, Adam.....	ThP 122
Schnier, Paul.....	TP 211	Schüttig, Hannes.....	ThP 012	Senior, Adam.....	ThP 121
Schnier, Paul.....	WP 006	Schwaemmle, Veit.....	ThP 518	Senko, Michael W.....	WP 090
Schnier, Paul.....	WP 054	Schwaborn, Kristina.....	MOD pm 4:10	Seo, Jong Bok.....	ThP 682
Schnute, William C.....	TP 372	Schwartz, Annette.....	WOF am 09:50	Seo, Jongbok.....	WP 255
Schnute, William C.....	TP 354	Schwartz, Jae C.....	TP 460	Seo, Jongcheol.....	WP 612
Schnute, William C.....	MP 405	Schwartz, Jae C.....	ThP 025	Seo, Kwang Su.....	TP 329
Schnute, William C.....	TOG pm 3:30	Schwartz, Steven.....	ThP 050	Seo, Youjin.....	WP 548
Schober, Celestina.....	MP 271	Schwartz, Stefan.....	MP 108	Serebryanny, Leonid.....	ThP 416
Schober, Yvonne.....	MOD am 09:50	Schwarz, Thomas.....	TOA am 08:30	Serhan, Charles.....	MP 251
Schoenherr, Regine.....	WP 513	Schwarzer, Dirk.....	MP 510	Serino, Takeshi.....	ThP 316
Schoeniger, Joseph.....	TP 489	Schweiger, Michelle.....	ThP 658	Serpa, Jason.....	ThP 560
Schoening, Ralf M.....	WP 327	Schweiger-Hufnagel, Ulrike.....	ThP 585	Serpa, Jason J.....	TOD am 08:30
Schoenmaker, Bart.....	WP 292	Schweikhard, Lutz.....	MP 108	Serres-Piole, Coralie.....	TP 294
Schoettner, Matthias.....	ThP 231	Schweitzer, Cameron.....	TP 601	Serwer, Philip.....	TP 393
Schofield, Emma L.....	TP 675			Sessler, Nicole.....	MP 616

INDEX OF AUTHORS

Sessler, Nicole	MP 514	Sharma, Rakesh	ThP 696	Shi, Xiangguo (Eric)	TP 502
Setchell, Kenneth D. R.	MP 357	Sharma, Ritin	MP 212	Shi, Xiangguo (Eric)	WP 545
Seto, Carmai	WP 344	Sharma, Seema	TP 451	Shi, Xiaofeng	MP 281
Seto, Carmai	TP 222	Sharma, Seema	TP 712	Shi, Xiaofeng	MP 282
Seto, Carmai	TP 219	Sharma, Swati	ThOA pm 3:30	Shi, Xiaofeng	WOD pm 2:50
Seto, Carmai	TP 221	Sharma, Vagisha	ThP 386	Shi, Xiaofeng	TP 180
Seto, Yasuo	WP 647	Sharma, Vaneet	MP 305	Shi, Xiaomeng	WP 559
Setou, Mitsutoshi	WP 167	Sharon, Jacqueline	MP 282	Shi, Xue	TP 656
Setou, Mitsutoshi	WP 417	Sharp, Joshua	ThP 476	Shi, Xue	TP 657
Setou, Mitsutoshi	TP 406	Sharp, Joshua S.	WP 392	Shi, Yang	TP 370
Setou, Mitsutoshi	WP 423	Sharp, Joshua S.	WOD pm 3:10	Shi, Yao	ThP 470
Setou, Mitsutoshi	WP 450	Sharp, Joshua S.	ThP 537	Shi, Yi	WP 522
Setou, Mitsutoshi	WP 439	Sharp, Joshua S.	TOD am 09:30	Shi, Yi	MOA am 08:50
Setoyama, Daiki	TP 196	Sharpless, Katherine	WP 290	Shi, Ying	MP 180
Settlage, Robert	Special 001	Shatsky, Maxim	WP 608	Shi, Yu	ThP 181
Severin, Mary	WP 594	Shau, Yuan	MP 553	Shi, Zhengyuan	MP 324
Sevinc, Berdan	WP 443	Shaw, Jared	WP 027	Shia, Jeremy	WP 141
Seward, Robert	ThP 600	Shaw, Jason L.	MP 587	Shiao, Tze Chieh	WP 481
Seyer, Karine	MP 554	Shaw, Patrick	WP 461	Shiao, Tze Chieh	MP 624
Seyfried, Nicholas	WP 592	Shaw, Porsha L.	MP 641	Shiao, Tze Chieh	MP 336
Seyfried, Nicholas	TP 666	Shay, Siobhan	MP 230	Shibata, David	ThP 238
Seyfried, Nicholas	WP 393	She, Yi	ThP 023	Shibayama, Nobuko	ThP 332
Seymour, Mark	WP 287	Shea, Joan-Emma	TOD pm 4:10	Shiea, Jentaie	MP 076
Seymour, Sean	MP 589	Shearer, David	TP 458	Shiea, Jentaie	TP 036
Seymour, Sean L.	MP 448	Shearn, Colin	TP 323	Shiea, Jentaie	MP 035
Seymour, Sean L.	WP 606	Shearn, Colin	ThP 493	Shiea, Jentaie	MP 034
Seymour, Sean L.	ThP 694	Shechter, David	TP 427	Shiea, Jentaie	MP 033
Seymour, Sean L.	TP 398	Shedden, Kerby	TP 525	Shiea, Jentaie	ThP 103
Seymour, Sean L.	MP 204	Shedden, Kerby	WP 367	Shieh, Paul	MP 575
Sgroi, Dennis C.	ThP 597	Sheets, Michael	ThP 185	Shields, David J.	WP 415
Shabanowitz, Jeffrey	WP 476	Sheetz, Michael P.	MP 256	Shih, Te-Ming	MP 692
Shabanowitz, Jeffrey	ThOA am 08:50	Sheils, Wayne	ThP 034	Shilov, Ignat	ThP 694
Shabanowitz, Jeffrey	TP 427	Sheils, Wayne	ThP 057	Shilton, Brian	TP 472
Shackleton, Cedric HL	TOC am 09:50	Sheldon, Diane	TOC am 09:10	Shima, Noriaki	WP 171
Shaffer, Scott A.	WP 576	Sheldrick, William S.	TP 106	Shimada, Miki	MP 173
Shaffer, Scott A.	WP 644	Shelley, Jake	TP 076	Shimma, Shuichi	ThP 068
Shaffer, Scott A.	MP 252	Shen, Angela	WP 134	Shimma, Shuichi	MP 370
Shaffer, Scott A.	Special 002	Shen, Biao	TP 119	Shimoyama, Shingo	WP 535
Shaffer, Scott A.	TP 465	Shen, Clifton	WOA am 08:30	Shin, Byung-Hee	WP 221
Shafii, Behnaz	MP 320	Shen, Jeremiah Y.	WP 199	Shin, Joong-Won	ThP 010
Shah, Ankit	WP 243	Shen, Jianwei	TP 232	Shin, Kyung Oh	ThP 261
Shah, Anuj	WP 376	Shen, Jim	WP 100	Shin, Myung	TP 607
Shah, Anuj	WP 377	Shen, Jinlin	ThP 176	Shin, Seung Koo	WP 612
Shah, Anuj	TP 141	Shen, Longzhu Q.	WP 313	Shin, Yeon Jin	ThP 173
Shah, Anuj R.	TP 160	Shen, Miaqing	ThP 306	Shinohara, Masakazu	ThP 282
Shah, Bhavana	ThP 254	Shen, Miaqing	ThP 307	Shinohara, Masakazu	ThP 283
Shah, Kumar	MOG am 08:50	Shen, Rong-Fong	WP 499	Shion, Henry	TP 136
Shah, Manesh	TP 621	Shen, Rong-Fong	WP 658	Shion, Henry	TP 169
Shah, Manesh	ThOC pm 3:50	Shen, Rong-Fong	ThP 675	Shion, Henry	ThP 288
Shah, Sumit	WP 686	Shen, Shida	MP 130	Shion, Henry	WP 426
Shah, Sumit	ThP 181	Shen, Shida	TP 072	Shion, Henry	WP 235
Shah, Sumit J.	WOC am 09:10	Shen, Wei-Chiang	WOG am 08:50	Shiori, Murakami	MOB pm 4:10
Shahidi-Latham, Sheerin	WP 418	Shen, Yufeng	MP 441	Shioyama, Shohei	MP 311
Shainskaya, Alla	WP 464	Shen, Yufeng	WOA pm 3:10	Shipkova, Petia	MP 263
Shalhoub, Joseph	ThP 250	Shen, Zhouxin	MOE pm 2:50	Shipkova, Petia	TP 102
Sham, Lokto	MP 540	Sheng, Shijun	WP 163	Shirey, Kevin	ThP 213
Shamshurin, Dmitri	TP 718	Sheng, Wenwen	TP 563	Shiu, Guo-Rung	TP 073
Shamshurin, Dmitri	ThP 350	Shen, Thomas	ThP 606	Shively, Christian	TP 387
Shan, Baozhen	MP 457	Sherman, David H.	WP 350	Shiyanov, Pavel	MP 393
Shan, Baozhen	MP 428	Sherman, Michael Y.	ThP 660	Shiyanov, Pavel	ThP 547
Shan, Baozhen	TP 441	Sherritt, Susan	MP 357	Shiyanov, Pavel	WP 599
Shan, Paul	WOD am 09:50	Sherrod, Stacy D.	WOA pm 4:10	Shlutenhoffer, Rachel	WOA pm 2:30
Shanmuga, Santosh	TP 545	Sherrod, Stacy D.	TOA am 09:10	Shockcor, John P.	ThP 288
Shannon, Anthony	TP 124	Sherwood, Robert	ThP 576	Shockcor, John P.	ThP 265
Shao, Junlong	MOG am 08:50	Sherwood, Robert	TP 519	Shoemaker, Glen	WP 551
Shao, Junlong	MOG pm 4:10	Shetty, Vivekananda	TP 457	Shomo, Ronald	ThP 018
Shapiro, John	WP 594	Shevchenko, Andrej	ThP 280	Short, Luke C	MP 019
Shapiro, Theresa A.	WP 277	Shevchenko, Andrej	MP 436	Short, Tim	ThP 074
Shariatgorji, Mohammadreza	WP 410	Shevchenko, Andrej	TP 467	Short, Tim	MP 375
Shariatgorji, Mohammadreza	TP 404	Shevchenko, Andrej	WOC am 09:50	Shortreed, Michael	ThP 619
Shariatgorji, Mohammadreza	TOF pm 3:10	Shevchenko, Anna	TP 467	Shortreed, Michael R.	WP 709
Sharma, Deepti	TP 124	Shevchenko, Ganna	TP 604	Shou, Wilson	WP 259
Sharma, Deepti	ThP 486	Shevchenko, Valeriy	MP 678	Shou, Wilson	ThP 186
Sharma, Gautam	TP 288	Shi, Honglan	TOB am 09:30	Shrestha, Bindesh	WP 293
Sharma, Jyoti	WP 416	Shi, Peizhe	MP 447	Shrestha, Bindesh	WP 294
Sharma, Jyoti	ThP 521	Shi, Riyi	MP 048	Shrestha, Manisha	WP 042
Sharma, Pritesh S.	MP 169	Shi, Ruijun	WP 342	Shrivastava, Kamlesh	WP 423

INDEX OF AUTHORS

Shrivastav, Braj R.	ThP 689	Simpkins, James	WP 031	Sleno, Lekha.....	MP 624
Shteynberg, David.....	WP 381	Simpkins, Joseph	MP 434	Slysz, Gordon	WP 376
Shteynberg, David.....	WP 369	Simpkins, Joseph	ThP 210	Slysz, Gordon	WP 377
Shteynberg, David.....	ThP 386	Simpson, David.....	ThP 538	Slysz, Gordon	TP 141
Shu, Hongjun	ThP 506	Simpson, Jack.....	ThP 414	Slysz, Gordon	TP 450
Shuford, Christopher	WP 302	Sims, Martin	MP 126	Slysz, Gordon W.....	TP 160
Shukla, Anil K.	TP 450	Sindona, Giovanni	WP 448	Smargiasso, Nicolas.....	ThP 141
Shukla, Animesh	MP 556	Sindona, Giovanni	ThP 317	Smargiasso, Nicolas.....	MP 574
Shukla, Ashok.....	MP 297	Sindona, Giovanni	WP 133	Smart, Brian.....	ThP 612
Shukla, Mukta	MP 529	Singec, Ilyas.....	WOA pm 3:50	Smathers, Rebecca.....	TP 323
Shukla, Soni.....	TP 715	Singer, David.....	TP 151	Smathers, Rebecca.....	ThP 493
Shukoor, M. Ibrahim.....	ThP 144	Singer, Heinz.....	MP 385	Smiljanic, Danijela.....	WP 337
Shulaev, Vladimir.....	ThP 251	Singer, Mary E.....	WP 608	Smilowitz, Jennifer	ThP 275
Shulman, Lee	WP 348	Singh, Ajeet	MP 333	Smirnov, Igor P.....	WP 192
Shulman, Nicholas.....	WP 046	Singh, Harminder	MP 687	Smirnov, Igor P.....	WP 183
Shum, Sam	MP 128	Singh, Juswinder	ThP 185	Smith, August B.....	MP 614
Shvartsburg, Alexandre A.	TP 151	Singh, Pragya	WP 588	Smith, Alan M.	ThP 234
Sickmann, Albert.....	MP 495	Singh, Rakesh	TP 710	Smith, Barrett.....	MP 535
Sickmann, Albert.....	ThP 398	Singh, Sasha	TP 551	Smith, Daniel.....	ThP 279
Sickmann, Albert.....	ThP 466	Singh, Sasha	TP 624	Smith, Daniel.....	ThP 138
Sickmann, Albert.....	MP 460	Singh, Thoudam S.K.	TP 309	Smith, Daniel.....	WP 089
Siddiqi, Zafar A.	WP 340	Sinha, Sanjib.....	ThP 697	Smith, Darrin.....	ThP 351
Sidibé, Jonathan	ThP 473	Sinnathamby, Gomathinayagam	TP 457	Smith, Darrin.....	ThP 299
Sidisky, Leonard	ThP 126	Sinner, Frank M.	WP 149	Smith, David	ThP 670
Siegel, Donald	ThP 372	Siri, Didier.....	WP 062	Smith, David J	TOC am 09:50
Siegel, Elizabeth	ThP 079	Sironi, Selena	MP 367	Smith, David P.....	ThP 671
Siegel, Erin M.	ThP 238	Sitkovsky, Michail.....	TP 708	Smith, Derek	TP 689
Siegel, Paul D.	ThP 529	Siu, Chi-Kit.....	WP 485	Smith, Derek	ThP 587
Siek, Kevin.....	TP 097	Siu, Chi-Kit.....	WP 482	Smith, Derek	WP 642
Siek, Kevin.....	WP 330	Siu, Chi-Kit.....	ThP 004	Smith, Derek	WP 633
Siek, Kevin.....	WP 074	Siu, K W Michael	ThP 004	Smith, Derek	ThP 685
Siek, Kevin.....	ThP 302	Siu, K W Michael	ThP 017	Smith, Derek	TP 688
Siek, Kevin.....	WP 303	Siu, K W Michael	MP 085	Smith, Derek	TP 668
Siek, Kevin.....	TP 088	Siu, K W Michael	ThP 698	Smith, Derek S.....	WP 509
Siek, Kevin.....	WP 206	Siu, K W Michael	MP 688	Smith, Donald.....	WP 433
Siek, Kevin.....	ThP 246	Siu, K. W. Michael	ThP 006	Smith, Donald.....	ThOC pm 3:10
Siek, Kevin.....	ThP 335	Siu, Shui-On.....	WP 485	Smith, Donald.....	MOD am 09:30
Siek, Kevin.....	TP 197	Siu, Chi-Kit.....	WP 484	Smith, Donald.....	MP 099
Siek, Kevin.....	MP 406	Sivarajah, Vinothini	WP 218	Smith, Donald F.	ThOA pm 2:30
Sigh, Harminder.....	WP 117	Sivas, Summer	ThP 668	Smith, Duncan.....	MP 580
Sigman, Michael.....	MP 425	Siwik, Deborah A.....	TP 653	Smith, Emmamarie.....	TOB am 08:30
Signorini, Stefano.....	TP 649	Sjöberg, Per	ThP 325	Smith, Erica.....	ThP 340
Sigurdsson, Baldur Bragi	WP 687	Sjödín, Marcus	TP 604	Smith, Erica.....	MOE am 09:30
Sigurjónsdóttir, Helga Ágústa.....	WP 687	Sjödín, Marcus	ThP 615	Smith, Erica.....	ThP 337
Sjilaber, Inge	ThOA pm 2:50	Sjoelund, Virginie	ThP 509	Smith, Geoffrey T.....	MP 455
Sillevis Smitt, Peter A.E.....	MP 681	Skaf, Munir S.....	WP 572	Smith, Geoffrey T.....	TP 517
Sillevis Smitt, Peter A.E.....	TP 667	Skates, Steven J.....	WP 507	Smith, Harold T.....	WP 102
Silliman, Christopher	WP 637	Skene, Debra.....	WP 224	Smith, Harold T.....	TP 237
Silva, Flamys Lena	TP 150	Skerget, Sheri	TP 701	Smith, J. Richard.....	MP 399
Silva, Jose	WP 281	Skilton, St John.....	WOF pm 3:50	Smith, John.....	ThP 079
Silva, Leslie.....	TP 504	Skilton, St John.....	ThP 637	Smith, Jorge.....	ThP 135
Silva, Raissa M.C. F.	TP 306	Skilton, St John.....	TP 169	Smith, Kerri.....	ThP 373
Silva Zolezzi, Irma	MP 501	Skilton, St John.....	TP 121	Smith, Laurie.....	MOE pm 2:50
Silveira, Joshua A.....	ThP 022	Skinner, Julie.....	ThP 634	Smith, Lloyd.....	WP 709
Silveira, Joshua A.....	ThP 042	Skinner, Owen S.....	TP 499	Smith, Lloyd M.....	TP 564
Silvestre, Armando J. D.....	ThP 328	Skinner, Wayne	ThP 305	Smith, Lloyd M.....	ThP 619
Silvestri, Catherine.....	WP 175	Sköld, Karl	MP 505	Smith, Mark.....	WP 060
Simas, Rosineide C.....	MP 043	Sköld, Olof	MP 505	Smith, Mark A.....	MP 233
Simas, Rosineide C.....	TP 306	Skor, Heather	ThP 102	Smith, Michael	TP 335
Simeone, Diane	TP 525	Skora, Stanislaw	MP 287	Smith, Michael	MP 126
Simeone, Jennifer	ThP 112	Slade, Peter G.....	ThP 657	Smith, Nadia	TP 273
Simmons, Doug	MP 589	Slade, Susan E.....	WP 591	Smith, Norman	MP 196
Simmons, Douglas A.....	WP 536	Slade, Susan E.....	TP 644	Smith, Norman	WP 270
Simon, Gabriel.....	WP 464	Slagel, Joseph.....	ThP 409	Smith, Peter	ThP 334
Simon, Hannah	TP 212	Slagel, Joseph.....	ThP 386	Smith, Peter	MOB am 09:50
Simon, Hannah	WOG pm 3:50	Slapetova, Iveta.....	MP 288	Smith, Rachelle.....	WP 454
Simon, Hannah	WOG pm 2:50	Slebos, Robbert	ThP 602	Smith, Richard.....	WOA pm 3:10
Simon, Romain	WOE pm 3:10	Slebos, Robbert	ThOA am 08:30	Smith, Richard D.....	ThP 647
Simon, Yamil	WP 291	Slebos, Robbert J. C.	TP 691	Smith, Richard D.....	ThP 033
Simon, Yamil	WP 493	Slebos, Robbert J.C.....	MP 693	Smith, Richard D.....	ThP 255
Simonian, Margaret	TP 654	Sledz, Alaine	WP 322	Smith, Richard D.....	MP 590
Simons, Brenna	TP 141	Sleighter, Rachel.....	WP 086	Smith, Richard D.....	MP 441
Simons, Brigitte	ThP 262	Sleno, Lekha	ThP 252	Smith, Richard D.....	WOE am 08:50
Simons, Brigitte	ThP 295	Sleno, Lekha	WP 481	Smith, Richard D.....	WP 220
Simons, Brigitte	ThP 093	Sleno, Lekha	MP 588	Smith, Richard D.....	TP 141
Simons, Brigitte	MP 588	Sleno, Lekha	MP 336	Smith, Richard D.....	TP 160
Simpkins, James	MP 194	Sleno, Lekha	WP 299	Smith, Richard D.....	TP 151

INDEX OF AUTHORS

Smith, Richard D.....	WP 377	Song, Chun-Qing.....	ThOA am 09:10	Spencer-Pierce, Jennifer.....	MP 507
Smith, Richard D.....	ThP 088	Song, Chun-Qing.....	WP 404	Spengler, Bernhard.....	ThOE am 10:10
Smith, Richard D.....	WOA am 08:50	Song, Ehwang.....	TP 522	Spengler, Bernhard.....	MOD am 09:50
Smith, Richard D.....	WP 234	Song, Ehwang.....	ThP 574	Spentzos, Dimitrios.....	MP 330
Smith, Richard D.....	WP 376	Song, Hangtian.....	TP 541	Spicer, Douglas A.....	WP 505
Smith, Richard D.....	TP 567	Song, Hangtian.....	MP 490	Spicer, Vic.....	ThP 350
Smith, Richard D.....	ThP 211	Song, Jian.....	TP 325	Spicer, Vic.....	MP 228
Smith, Richard D.....	TP 673	Song, Jin Sook.....	WP 248	Spicer, Vic.....	TP 458
Smith, Robert W.....	TP 134	Song, Jing.....	WP 611	Spicer, Vic.....	MP 687
Smith, Scott.....	MOC am 09:50	Song, Jong Hee.....	WP 334	Spilker, Mary.....	WP 415
Smith IV, Archer.....	WP 592	Song, Junkan.....	TP 344	Spivak, Marina.....	MP 452
Smith IV, Archer.....	WP 393	Song, Liguu.....	TP 186	Spivak, Marla.....	ThP 241
Smith IV, Archer D.....	WP 392	Song, Renduo.....	MP 673	Spooner, Neil.....	TOF am 10:10
Smith IV, Archer D.....	TP 509	Song, Tao.....	WP 482	Spraggins, Jeffery.....	ThP 432
Snapp, Heidi.....	TOF am 09:10	Song, Xiaomin.....	ThP 609	Spraggins, Jeffery.....	MOD am 08:50
Snedecor, June.....	TP 439	Song, Xiaomin.....	ThP 694	Spraggins, Jeffery M.....	TP 415
Snedecor, June.....	WP 703	Song, Yang.....	WP 240	Spraggins, Jeffery M.....	WP 448
Sneekes, Evert-Jan.....	TP 125	Song, Yang.....	ThP 175	Sprenger, Richard R.....	MP 600
Sneekes, Evert-Jan.....	MP 224	Song, Zhihong.....	ThP 220	Sprung, Robert.....	TP 685
Snelling, Jonathon.....	ThOC am 08:30	Sonntag, Denise.....	MP 268	Squeo, Valeria.....	TP 649
Snelling, Jonathon.....	MP 039	Soo Hoo, Pamela T.....	TP 597	Sraj, Lenka.....	ThOB am 09:30
Sniatynski, Matthew.....	TOC am 09:10	Soparawalla, Santosh.....	TOB pm 4:10	Sricholpech, Marnisa.....	ThP 565
Sniatynski, Matthew.....	ThP 286	Soper, Steven A.....	WP 624	Sridhara, Viswanadham.....	ThOA am 08:50
Snovida, Sergei.....	WOD am 09:50	Sorensen, Dylan J.....	MP 668	Sridharan, Rupa.....	TP 428
Snow, Theodore P.....	WP 023	Sorg, Bernd.....	ThP 153	Srinivasa, Savita.....	WP 577
Snozek, Christine.....	WP 161	Soriano, Aileen.....	TP 694	St. Clair, Daret.....	TP 606
Snozek, Christine L.....	WP 160	Sorkin, Alexander.....	ThOD am 08:30	Staats, Sau Lan Tang.....	ThP 207
Snyder, Bruce.....	ThP 474	Sorokin, Dmitry.....	MP 533	Stacy, Tina.....	ThP 030
Snyder, Evan.....	WOA pm 3:50	Sosic, Zoran.....	WOD am 10:10	Stadler, Peter F.....	WP 628
Snyder, John.....	ThP 258	Sosinska, Grazyna.....	ThP 651	Stafford, George.....	MP 100
Snyder, John H.....	TOC am 09:30	Soubayrol, Patrick.....	TP 120	Stafford Noble, William.....	MP 452
Snyder, John L.....	ThOF am 10:10	Souda, Puneet.....	WOA am 08:30	Stamatoyannopoulos, John A.....	WP 518
Snyder, Nathaniel W.....	WOC am 09:10	Soufi, Boumediene.....	ThP 498	Standing, Kenneth.....	TP 458
Snyder, Shane.....	WP 311	Soukup-Hein, Renee J.....	MP 169	Stanford, Michael.....	ThOC pm 4:10
Snytnikova, Olga.....	ThP 531	Sours, Kevin.....	TP 474	Stange, Daniel.....	TOG am 09:30
So, Hun-Young.....	ThP 535	Sours, Kevin.....	TP 473	Stanislaus, Avalyn.....	TP 207
So, Jonathan.....	MP 202	Sousa, Eric.....	TP 105	Stanja, Juliane.....	MP 108
Sobhi, Hamid Reza.....	WP 156	Southard, Katherine.....	ThP 617	Stankov-Jovanovic, Vesna.....	TP 478
Sobhi, Hamid Reza.....	MP 503	Southwick, Katie.....	ThP 206	Stansberry, Lori C.....	ThP 634
Sobieszek, Apolinary.....	TP 539	Souza, Paulo C. T.....	WP 572	Stapels, Martha.....	WP 565
Sobott, Frank.....	TP 146	Souza, Vanderlea.....	TP 139	Stapels, Martha.....	MP 584
Sobott, Frank.....	WOB pm 3:10	Souza, Vanderlea.....	TP 150	Stapels, Martha.....	ThOF am 09:30
Sobott, Frank.....	MP 242	Sowa, Mathew.....	MOA am 08:30	Stapels, Martha.....	TOA am 09:30
Sobott, Frank.....	MP 290	Sowa, Mathew.....	MP 493	Stapels, Martha D.....	MP 585
Soderblom, Erik.....	TP 709	Sowell, John D.....	MP 346	Staples, Gregory O.....	TP 129
Soderblom, Erik J.....	MP 483	Sowers, Lawrence C.....	TP 712	Staples, Gregory O.....	TP 183
Soderblom, Erik J.....	MP 585	Spacil, Zdenek.....	MP 343	Staples, Gregory O.....	ThP 571
Soderblom, Erik J.....	ThP 517	Spagou, Konstantina.....	ThOF pm 4:10	Starcevic, Borislav.....	ThP 361
Soderblom, Erik J.....	WP 645	Spaner, David E.....	MP 355	Stark, Alyssa.....	MP 267
Söderquist, Marcus.....	MP 505	Spanu, Pietro D.....	ThP 300	Stark, Chris.....	ThP 406
Sofalvi, Szabolcs.....	ThP 373	Sparano, Brian.....	MP 083	Stark, Timo.....	MP 158
Soffientini, Paolo.....	TP 462	Sparkman, O. David.....	WP 114	Starkey, Jonathan.....	TP 605
Sofia, Michael.....	MP 192	Sparkman, O. David.....	WP 115	Star-Weinstock, Michal.....	WP 674
Soga, Tomoyoshi.....	MP 314	Sparkman, O. David.....	WP 186	Staub, Richard E.....	ThP 318
Soga, Tomoyoshi.....	TOC am 10:10	Sparkman, O. David.....	TP 041	Staub, Jonathan.....	TOF pm 3:50
Soininen, Hilka.....	TP 675	Sparling, Richard.....	TP 718	Staub, Jonathan.....	TOF pm 2:50
Sokratous, Kleitos.....	WP 546	Sparling, Richard.....	ThP 350	St-Denis, Nicole.....	WP 707
Solaiman, Daniel.....	TP 331	Spasskiy, Alexander.....	MP 010	Stedman, Christopher.....	WOF am 09:50
Solano, Maria I.....	ThP 394	Specht, August.....	ThP 025	Stedwell, Corey.....	ThP 007
Soldi-Lose, Héloïse.....	TP 478	Specht, August.....	WP 071	Steevers, Eric.....	TP 595
Solis, Nestor.....	ThP 413	Specht, August.....	WP 531	Steels, Chloe.....	WP 228
Solnick, Jay.....	MP 694	Specht, August.....	TP 247	Steen, Hanno.....	ThP 544
Solomon, Peter S.....	ThP 225	Specht, August.....	ThP 050	Steen, Hanno.....	TOA pm 3:10
Softwisch, Jens.....	TP 419	Specht, August A.....	TP 460	Steen, Hanno.....	TP 624
Softwisch, Jens.....	MP 007	Specht, August A.....	ThP 454	Steen, Hanno.....	WP 659
Solyakov, Alexey.....	ThP 303	Speed, Nicole.....	MP 261	Steen, Hanno.....	TOA am 08:30
Soma, Lawrence.....	WP 099	Speer, Karl.....	WP 327	Steen, Judith.....	TP 551
Soma, Lawrence R.....	ThP 374	Speicher, David W.....	WP 639	Steen, Judith.....	TOA am 08:30
Somaiya, Pranav.....	MP 547	Speicher, David W.....	ThP 693	Steen, Judith.....	TOA pm 3:10
Somaiya, Pranav.....	ThP 596	Spellman, Daniel S.....	TP 648	Steenwyk, Rick.....	WP 663
Somak, Ray.....	TP 697	Spellman, Daniel S.....	TP 524	Steenwyk, Rick.....	MOG pm 3:50
Somogyi, Arpad.....	MP 060	Spencer, Brian H.....	TP 597	Steere, Allen C.....	ThP 600
Somogyi, Arpad.....	WP 503	Spencer, Daniel.....	MP 291	Stefanopoulou, Maria.....	TP 106
Somsen, Govert.....	TP 126	Spencer, Janice.....	WP 124	Stefanski, Anja.....	MP 523
Sondej, Melissa.....	MP 534	Spencer, Sandra.....	MP 365	Steger, Mirco.....	ThP 688
Sonderfeld, Hannah.....	MP 006	Spencer, Sandra.....	WP 502	Stegner, Daniel.....	WP 119
Song, Chi.....	MOC am 08:50	Spencer, Sandra.....	WP 497	Steill, Jeffrey.....	ThOB am 10:10

INDEX OF AUTHORS

Steill, Jeffrey	ThP 004	Storey, Dylan	MP 449	Sukumar, Saraswati	WP 695
Steill, Jeffrey	MOC pm 2:30	Storey, Dylan	ThP 385	Sullards, Cameron	TOC pm 2:50
Steill, Jeffrey	WP 498	Storey, Dylan	ThP 402	Sullards, M. Cameron	MP 270
Steill, Jeffrey	WP 497	Storey, Joseph	TP 375	Sullivan, John K.	WP 552
Steimer, Sarah	ThP 325	Stott, William	WP 204	Sullivan, Kathleen	MP 171
Stein, Daniel	MP 353	Stoudemayer, Melissa	MP 607	Sullivan, Kevin	MP 658
Stein, Rebecca E.	ThP 326	Stoudemayer, Melissa	WP 392	Sullivan, Mike	WP 097
Stein, Stephen	TOA pm 2:30	Stout, Jake M.	ThP 232	Sultan, Farhan	TP 058
Stein, Stephen	ThOA am 09:50	Stout, Matthew	WP 675	Sultan, Omar	MP 592
Stein, Stephen	WP 378	Strack, Peter R.	MP 667	Sulyok, Michael	MP 423
Stein, Stephen	WP 635	Strader, Michael Brad	MP 612	Sulzer, Philipp	ThP 049
Stein, Stephen	WP 289	Stratton, Tim	TP 247	Sumandea, Marius	TP 713
Stein, Stephen	MP 077	Stratton, Tim	MOF pm 3:50	Sumner, Lloyd W.	ThP 258
Stein, Stephen	WP 492	Stratton, Tim	MOF am 09:10	Sumner, Lloyd W.	TOC am 09:30
Stein, Stephen	WP 053	Stratton, Tim	ThP 194	Sun, Aimin	MP 180
Stein, Stephen	WP 291	Stratton, Tim J.	ThP 198	Sun, Chengjun	MP 180
Stein, Stephen E.	WP 493	Streeper, Ryan	ThP 227	Sun, Difei	MP 578
Steiner, Douglas	MP 647	Stresau, Dick	ThP 057	Sun, Grace Y.	TP 563
Steiner, Douglas	MP 650	Stresau, Dick	ThP 034	Sun, Huadong	ThP 131
Steiner, Douglas	MP 648	Strickland, Erin C.	MP 641	Sun, Jinchun	WP 229
Steiner, Douglas	MP 651	Strickland, Erin C.	TOD pm 3:10	Sun, Lei	MP 507
Steiner, Douglas	MP 649	Strobel, Fred	TP 095	Sun, Li	MP 404
Steiner, Douglas	MP 646	Strohalm, Jiri	ThP 418	Sun, Liping	ThOA pm 3:30
Steiner, Robert	WP 674	Strohalm, Martin	ThP 418	Sun, Qian	WP 118
Steinhuber, Bernd	ThP 184	Strong, Danielle R.	MP 664	Sun, Qian	MP 527
Stenken, Julie A.	ThP 440	Strukl, Joseph	TP 427	Sun, Qingyu	ThP 450
Stenoien, David	WOA pm 3:10	Strum, John	MP 276	Sun, Rachel	ThP 113
Stenoien, David L.	WP 233	Strum, John	ThP 484	Sun, Rachel	WP 140
Stenoien, David L.	TP 450	Strum, John S.	WOD am 08:50	Sun, Ruixiang	WP 073
Stephens, Elaine	ThP 536	Strupat, Kerstin	TP 091	Sun, Ruixiang	ThOA am 09:10
Stephenson, James	WP 374	Strupat, Kerstin	WP 424	Sun, Rui-Xiang	WP 404
Stergachis, Andrew B.	WP 518	Strupat, Kerstin	MP 568	Sun, Shixin	WP 085
Sterling, Harry J.	MOB am 09:30	Struthers, Mary	MP 171	Sun, Shulei	MP 214
Steven, Rory	TP 414	Struwe, Weston	ThP 564	Sun, Wei	ThOA am 09:10
Stevens, Douglas	MP 128	Stuart, Sarah	TP 566	Sun, Wenjian	TP 027
Stevens, Fred	ThP 229	Stuart, Sarah	WP 462	Sun, Wenlong	TP 657
Stevens, Fred	ThP 327	Stuart, Scott	MP 589	Sun, Wenlong	TP 658
Stevens, J. Fred	WP 349	Stuart, Scott A.	MP 581	Sun, Wenlong	TP 656
Stevens, Jeff	WP 381	Stübiger, Gerald	WP 298	Sun, Xiaohong	MP 653
Stevens, Jeffrey	WP 505	Stucki, Silvan, R.	ThOD pm 3:10	Sun, Youting	MP 469
Stevens, Joan	MP 409	Stucki, Silvan, R.	WP 174	Sun, Yu-Ni	MP 485
Stevens, Raymond C.	MOA am 10:10	Stuehr, Dennis	MP 642	Sun, Zhen	ThP 143
Stevens, Sarah	TP 510	Stuff, Jack	ThP 132	Sun, Zhen	ThP 419
Stevens, Sarah	MP 264	Stühler, Kai	MP 523	Sun, Zhi	WP 369
Stevens, Tyler	ThP 677	Stühler, Kai	ThP 594	Sun, Zhi	WP 381
Stevens, Jr., Stanley M.	WP 457	Stukenberg, Todd	WP 476	Sun, Zhi	WP 505
Stevens, Jr., Stanley M.	ThP 542	Stults, John T.	ThOF am 08:50	Sun, Zhiyuan	ThP 292
Stevens, Jr., Stanley M.	WP 649	Sturm, Robert	TP 661	Sundarapandian, Sevugarajan	ThP 044
Steward, Lance E.	ThP 091	Stutts, Whitney L.	MP 239	Sung, Ting-Yi	TP 378
Stewart, Clinton	MP 178	Stutzman, John	MP 525	Sunner, Jan	ThP 349
Stewart, Grant D.	ThP 681	Styles, Iain	WP 411	Sussman, Michael R.	ThP 522
Stewart, Nicolas	MP 331	Su, An-Kai	TP 264	Sussman, Michael R.	TP 623
Stewart, Paul M.	TOC am 09:50	Su, Baoning	MP 140	Sussman, Michael R.	MOE pm 4:10
Stickle, Dawn	MP 354	Su, Bin	ThP 174	Suttles, Nicholas	ThP 110
Stickle, Dawn	MP 355	Su, Xiao	ThP 274	Sutton, Jennifer	MP 402
Stiekema, Han	TOC am 09:50	Subbian, Ezhilkani	TP 715	Suzuki, Hiroyuki	MP 173
Stiles, Ashlee	ThP 279	Subramanian, Raju	TP 217	Suzuki, Kenichi	TP 297
Stillman, Bruce	TP 546	Suckau, Detlev	WP 629	Suzuki, Koichi	WP 171
Stingl, Christoph	MP 681	Suckau, Detlev	ThP 585	Suzuki, Nobuhiro	ThP 251
Stingl, Christoph	ThP 650	Suckau, Detlev	MP 506	Suzuki, Shigeru	MP 386
Stingl, Christoph	TP 592	Suckau, Detlev	ThP 430	Suzuki, Takahito	MP 362
Stingl, Christoph	TP 667	Suckau, Detlev	ThOF am 09:50	Suzuki, Yasutaka	MP 395
Stobaugh, Jordan	MP 593	Suematsu, Makoto	ThP 562	Svatoš, Aleš	MP 520
Stocchero, Matteo	WP 227	Suematsu, Makoto	WP 439	Svenningsson, Per	TP 404
Stockham, Rex	WP 193	Suetering, Juergen	MP 063	Svilar, Ljubica	TP 478
Stocks, Bradley B.	MP 634	Suflita, Joe	ThP 349	Svoboda, Michal	WP 155
Stoehr, Gabriele	ThP 626	Sugalski, Julia M.	TP 705	Svobodova, Helena	MP 222
Stoffel, Markus	TP 698	Sugiura, Yuki	WP 423	Svobodova, Helena	MP 221
Stoffel, Robert	WP 682	Sugiura, Yuki	WP 417	Swales, John G.	TP 080
Stojilkovic, Natali	ThP 222	Sugiura, Yuki	WP 450	Swart, Remco	MP 224
Stokes, Peter	TP 335	Sugiyama, Keikichi	WP 450	Swart, Remco	TP 125
Stolee, Jessica A.	WP 293	Sugiyama, Masuyuki	MP 395	Swarup, Shilpa	TP 613
Stoll, Maria S.K.	MP 349	Sugiyama, Masuyuki	ThP 080	Swe, Mimi	MP 322
Stolowitz, Mark	MP 204	Sugiyama, Naoyuki	TP 536	Swearingen, Kristian E.	TP 149
Stone, Erica L.	MP 278	Suh, Joon Hyuk	ThP 169	Swearingen, Kristian E.	WP 381
Stone, Matthew	TP 379	Suh, Jungghyuck	MP 070	Sweedler, Jonathan	MP 499
Stone, Matthew	TP 548	Suits, Arthur	MP 014	Sweedler, Jonathan	ThP 416

INDEX OF AUTHORS

Sweedler, Jonathan	TP 696	Tajiri, Michiko	TP 515	Tang, Keqi	TP 673
Sweedler, Jonathan	ThP 239	Takada, Yasuaki	MP 395	Tang, Marie-Christine	WP 339
Sweedler, Jonathan	ThP 152	Takahashi, Hidenori	ThP 629	Tang, Mike	TP 115
Sweedler, Jonathan	TP 454	Takahashi, Hidenori	ThP 582	Tang, Ning	MP 694
Sweedler, Jonathan	WP 579	Takahashi, Kazuo	TP 509	Tang, Ning	WOD pm 3:50
Sweedler, Jonathan V.	ThP 148	Takahashi, Kyohei	WP 535	Tang, Ning	TP 511
Sweeney, Michelle	ThP 539	Takahashi, Lynelle K.	WP 453	Tang, Ning	ThP 641
Sweeney, Michelle	MP 645	Takahashi, Lynelle K.	ThP 038	Tang, Ning	WOD am 10:10
Sweeny, Scott	WP 678	Takahashi, Madoka	ThP 268	Tang, Qing	TP 127
Sweet, Steve M.M.	ThP 605	Takahashi, Maki	ThP 419	Tang, Rui	ThP 147
Swenberg, James	WP 675	Takahashi, Masatoshi	TP 297	Tang, Wilfred	MP 231
Sweredoski, Michael J.	WP 604	Takahashi, Masatoshi	ThP 358	Tang, Wilfred	MP 426
Sweredoski, Michael J.	TP 517	Takahashi, Nobuhiro	WP 180	Tang, Xiaonan	ThP 115
Sweredoski, Michael J.	WP 393	Takai-Igarashi, Takako	TP 629	Tang, Yanan	TP 116
Sweredoski, Michael J.	WP 705	Takami, Tomonori	MP 311	Tang, Yi	ThP 494
Sweredoski, Michael J.	MP 455	Takara, Kohji	MP 512	Tang, Yingying	ThP 372
Sweredoski, Michael J.	WP 087	Takashima, Chika	ThP 167	Tang, Yuhong	TOC am 09:30
Swietlow, Aleksander	ThP 446	Takats, Zoltan	TP 029	Tang, Zhirong	TP 254
Swift, Christopher	ThOB pm 2:30	Takats, Zoltan	ThOG pm 2:30	Tangrea, Michael	TP 634
Syage, Jack	TP 074	Takats, Zoltan	ThOE am 10:10	Tanguay, Robert	ThP 229
Syage, Jack A.	MP 409	Takats, Zoltan	ThP 393	Tanigawa, Testuo	MP 165
Syage, Jack A.	TP 031	Takats, Zoltan	ThP 045	Tanna, Sangeeta	TP 083
Syka, John E. P.	ThOB pm 4:10	Takats, Zoltan	ThP 443	Tanna, Sangeeta	TP 236
Syka, John E. P.	MP 572	Takats, Zoltan	MOD am 09:50	Tannenbaum, Steve	WP 661
Syka, John E. P.	ThP 025	Takayama, Mitsuo	WP 477	Tannenbaum, Steven	WP 676
Sylvester, Kathrine Beck	WP 698	Takayama, Mitsuo	TP 020	Tanner, Lukas B.	MP 256
Symonds, Joshua	MP 021	Takayama, Mitsuo	TP 052	Tanouye, Urszula	WP 352
Syrstad, Erik	ThP 065	Takeda, Kosuke	MOD pm 4:10	Tao, Andy	TP 533
Szacherski, Pascal	TOA pm 3:50	Takeuchi, Atsuko	ThP 167	Tao, Andy	MP 613
Szagal, Evelin D.	WP 608	Takeuchi, Takae	MP 362	Tao, Hui	ThP 436
Szagal, Evelin D.	TP 570	Takino, Masahiko	MP 418	Tao, Lei	MP 404
Szalay, Daniel	ThP 045	Talamantes, Tatjana	TP 396	Tao, Li	ThP 485
Szaniszlo, Tamas	ThP 443	Talat, Nari	WP 262	Tao, Nannan	MP 275
Szaniszlo, Tamas	ThP 393	Talat, Nari	WOF am 09:50	Tao, Nannan	MP 277
Szczepanski, Jan	ThP 054	Talbot, Francis O.	MOC pm 3:30	Tao, Shujuan	MP 284
Szczesniowski, Andre	ThP 165	Talmdage, James	MOA pm 3:50	Tao, Song	WP 484
Szczesniowski, Andre	MP 351	Tam, Janet	MP 633	Tao, Weiguo Andy	MP 045
Sze, Siu Kwan	WP 470	Tam, Yuen L.	MP 292	Tao, Weiguo Andy	MP 611
Szekely-Klepser, Gabriella	ThP 176	Tambling, Todd R.	WP 322	Tao, Weiguo Andy	MP 480
Szekely-Klepser, Gabriella	WP 139	Tambor, Vojtech	WP 606	Tao, Weiguo Andy	WOA pm 2:30
Szewc, Mark	ThP 240	Tamburro, Davide	WP 602	Tao, Yi	TP 234
Szewczyk, Jerzy	TP 279	Tamura, Jun	ThP 333	Tao, Yuanqi	ThP 552
Szorik, Mary	MP 327	Tamura, Jun	MP 240	Taoka, Masato	WP 179
Szpacenko, Adam	WP 550	Tamura, Jun	TP 346	Taoka, Masato	WP 180
Sztejn, Marcelo	TP 621	Tan, Aimin	TP 268	Tapadia, Kavita	MP 069
Szu, Ping-Hui	ThP 494	Tan, Dawi	WP 108	Tarwade, Vinod	MP 260
Szumliński, Karen K.	WP 472	Tan, Lei	TP 002	Tashima, Toshio	TP 418
Szyska, Renata	ThP 160	Tan, Lin	WP 669	Tasiemski, Aurélie	MOD pm 3:10
T. S, Keshava Prasad	ThP 696	Tan, Lin	WP 139	Tasman, Natalie	WP 369
Tabata, Tsuyoshi	MP 445	Tan, Melvin	WP 097	Tasman, Natalie	ThP 386
Tabata, Tsuyoshi	ThP 383	Tan, Ming K.	ThOG pm 3:10	Tate, Stephen	WP 091
Tabb, David	TP 382	Tan, Minjia	TP 436	Tate, Stephen	ThP 395
Tabet, Jean-Claude	TP 120	Tan, Minjia	MOA pm 3:10	Tate, Stephen A.	WP 707
Tabet, Jean-Claude	WP 068	Tan, Wan Ling	MP 322	Tate, Stephen A.	ThP 244
Tabet, Jean-Claude	WP 581	Tan, Weiguo	TP 244	Tate, Stephen A.	MP 596
Tabet, Jean-Claude	ThOG am 09:50	Tan, Weiguo	WP 263	Tate, Stephen A.	MP 588
Tabet, Jean-Claude	WP 125	Tan, Weihong	ThP 144	Tate, Stephen A.	TOA am 09:50
Tabet, Jean-Claude	ThP 222	Tan, Xiaoli	TP 289	Tate, Stephen A.	WP 706
Tabet, Jean-Claude	ThP 019	Tan, Yujing	WP 562	Taucher, Monika	WP 001
Tabet, Jean-Claude	ThP 447	Tanaka, Haruna	MP 362	Taucher, Monika	WP 173
Tabet, Jean-Claude	WP 188	Tanaka, Hiroshi	TP 629	Taupenot, Laurent	WP 703
Tabet, Jean-Claude	TP 478	Tanaka, Koichi	ThP 582	Taus, Thomas	WOA pm 3:30
Tachibana, Hirofumi	WP 215	Tanaka, Koichi	ThP 629	Taverna, Domenico	WP 448
Tachiwana, Hiroaki	WP 535	Tanaka, Koichi	ThP 583	Taylor, Adrian	WP 084
Tadele, Kidus	MP 364	Tanaka, Koichi	ThP 652	Taylor, Adrian	WP 214
Tadjimukhamedov, Fatkhulla	ThP 073	Tanaka, Koichi	MP 445	Taylor, Adrian	TP 135
Tadjimukhamedov, Fatkhulla	TOB pm 4:10	Tanaka, Koichi	ThP 383	Taylor, Alan W.	TP 248
Taduran, Mylene	TP 357	Tanaka, Satoshi	ThP 383	Taylor, Allen	ThP 629
Taghizadeh, Koli	WP 676	Tang, Daniel	WP 251	Taylor, Angela E.	TOC am 09:50
Taguchi, Ayumu	ThP 629	Tang, Haixu	WP 383	Taylor, Lorne	WP 527
Taguchi, Ryo	ThP 285	Tang, Haixu	WP 397	Taylor, Lorne	WP 706
Tahir, Salman	MP 524	Tang, Haiying	ThP 346	Taylor, Lorne E.B.	TOA am 09:50
Tai, Jung-Hsiang	ThP 515	Tang, Hsin-Yao	WP 639	Taylor, Roger H.	MP 553
Taillon, Marie-Pierre	MP 143	Tang, Hua	ThP 624	Tayo, Lemmuell	MP 461
Taillon, Marie-Pierre	MP 144	Tang, Jijun	MP 390	Tchekhovskoi, Dmitrii	WP 378
Taillon, Marie-Pierre	MP 142	Tang, Kai	MP 541	Teague, Matthew	ThP 097
Tajima, Yoko	ThP 285	Tang, Keqi	WOE am 08:50	Tebbe, Andreas	ThP 622

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Teceno, Tyler.....	TP 589	Thomas, Paul M.	ThP 605	Tobe, Brian	WOA pm 3:50
Tedmon, Lauren.....	WP 031	Thomasson, Maggie	ThP 539	Tobias, Herbert	MP 074
Tedmon, Lauren.....	MP 194	Thomasson, Maggie	MP 645	Tobias, Herbert J.	ThP 364
Teffera, Yohannes	TP 241	Thompson, Alexis	ThOF pm 3:10	Todd, Bruce R.	ThP 035
Tegeler, Tony	MP 686	Thompson, Andrew	WP 681	Todd, Erik	TP 415
Tegeler, Tony	MP 670	Thompson, Bonne	ThP 279	Todua, Nino.....	WP 053
Tegeler, Tony	WP 394	Thompson, Christopher	TP 096	Todua, Nino.....	MP 077
Tegeler, Tony	TP 683	Thompson, Christopher	MOE am 09:30	Togunde, Paul.....	WOF am 09:30
Teixeira, Marco Antonio Gomes	ThP 339	Thompson, J. Will	MP 585	Tokarski, Caroline.....	WP 640
Telen, Marilyn J.....	ThP 517	Thompson, J. Will	WP 601	Tokarski, Caroline.....	WP 517
Tellstroem, Verena	MP 408	Thompson, J. Will	WP 645	Tokarski, Caroline.....	TP 627
Telu, Kelly H.....	ThP 601	Thompson, J. Will	MP 483	Tokarski, Caroline.....	WP 083
Teng, Cheng-Hsin.....	ThP 366	Thompson, J. Will	MP 232	Toler, Strawn.....	MP 375
Tentarelli, Sharon.....	MP 133	Thompson, J. Will	ThP 517	Tolfsen, Christina	TP 612
Teo, Chin Fen	WOD am 09:10	Thompson, J. Will	ThP 397	Tolic, Nikola.....	TP 567
Tep, Sam	WOD am 10:10	Thompson, Kristin	TP 584	Tolic, Nikolai.....	MP 594
Teplov, David.....	ThP 668	Thompson, Lilian.....	WP 129	Tolić, Nikola.....	WOA am 08:50
Teplov, David B.....	MP 632	Thompson, Melissa	WP 336	Tolić, Nikola.....	TP 450
Terashima, Isamu	TP 153	Thompson, Natalie J.	WP 005	Tollenaar, Rob A.E.M.....	WP 653
Terhune, Scott.....	WP 616	Thompson, Will	TP 709	Tolley, Dennis.....	MP 083
Termopoli, Veronica.....	MP 094	Thomson, Bruce.....	MP 085	Tolmachev, Aleksey	MP 099
Termopoli, Veronica.....	TP 261	Thomsson, Kristina	ThP 487	Tolmachev, Aleksey	MOD am 09:30
Ternes, Thomas	WP 311	Thomsson, Kristina	TP 185	Tolocka, Michael.....	MP 112
Ternes, Thomas	TOB am 08:30	Thornberg, Steven.....	MP 066	Tolocka, Michael.....	MP 365
Terry, Alvin	WP 145	Thornton, John	MP 081	Tolstikov, Vladimir	ThOA pm 2:50
Tessier, Luc.....	MP 538	Thorsteinsdottir, Margret	WP 687	Tomany, Michael	WP 270
Tester, Richland	ThP 185	Thunig, Janina	WP 427	Tomazela, Daniela	TOA am 10:10
Tevell Åberg, Annica	ThP 303	Thurlow, Sophie	ThP 434	Tomazela, Daniela	TP 670
Teyssier, Cécile.....	WP 019	Thurman, Michael.....	WOF pm 3:30	Tomazela, Daniela	WP 600
Teyssier, Cécile.....	WP 066	Thuß, Uwe.....	WP 327	Tomblin, Gregory.....	TP 558
Teyssier, Cécile.....	ThP 028	Thyparambil, Sheeno	ThP 525	Tomblin, Gregory.....	WP 475
Teyssier, Cécile.....	WP 338	Thyparambil, Sheeno	WP 164	Tomblin, Gregory.....	TP 431
Teyssier, Cécile.....	ThP 051	Tian, Ruijin.....	MP 202	Tomechko, Sara	TP 705
Tham, Katja	MP 602	Tian, Yu	MP 174	Tomechko, Sara E.	ThP 695
Thannhauser, Theodore.....	ThP 306	Tian, Yu	WP 682	Tomer, Kenneth B.	ThP 532
Thannhauser, Theodore.....	TP 519	Tian, Yu	WOF am 09:50	Tomer, Kenneth B.	TP 652
Thannhauser, Theodore.....	ThP 576	Tian, Zhixin	WOA am 08:50	Tomer, Kenneth B.	ThP 565
Thannhauser, Theodore W	ThP 307	Tian, Zhixin	TP 450	Tomer, Kenneth B.	TP 643
Tharakan, Ravi	ThP 611	Tice, Joseph	TP 043	Tomich, John	WP 445
Thaxton, Kurt	TP 355	Tice, Joseph	TP 078	Tomita, Masaru	TP 536
Thaysen-Andersen, Morten	ThP 566	Tice, Joseph	TP 026	Tomkins, Bruce A.	MP 319
Thayumanavan, Sankaran	ThP 151	Tichy, Ales	MP 489	Tomoko, Nukui.....	MP 331
Thayumanavan, Sankaran	WP 655	Tichy, Shane E.....	MP 091	Ton, Alain	WP 307
Theberge, Roger	TP 597	Tichy, Shane E.....	TP 242	Tong, Wei	TP 231
Theberge, Roger	ThP 388	Tichy, Shane E.....	TP 684	Tong, Xinchun.....	MOG pm 2:50
Theberge, Roger	ThP 607	Tidwell, Richard	WP 284	Tong, Xinchun.....	WOF am 08:30
Théberge, Marie-Claude	TP 267	Tikhonov, George	WP 330	Tong, Xinchun.....	MP 528
Thellin, Martin	WOD pm 2:50	Tiller, Philip	MOF pm 2:30	Tongxiang, Ren	WP 041
Theodoridis, Georgios	WP 666	Timar, Zoltan.....	MP 298	Tonn, George.....	MOF am 10:10
Therrien, Dan	MP 650	Timar, Zoltan.....	MP 308	Tonn, George.....	WOG pm 3:30
Therrien, Daniel	MP 649	Timm, Wiebke	ThP 231	Tonoli, David	TP 317
Therrien, Daniel	MP 651	Timmons, Richard	ThP 190	Toonen, Ruud	MP 614
Therrien, Daniel	MP 647	Timmons, Terry	TOB am 09:30	Topanurak, Supachai	ThP 528
Therrien, Daniel	MP 648	Timpe, Leslie	MP 674	Topper, Scott.....	MOA am 09:10
Therrien, Daniel	MP 646	Ting, Edmund Y.....	ThP 211	Topper, Scott.....	TP 400
Therrien, Nicole	MP 650	Ting, Joseph	TP 027	Torbett, Bruce.....	WP 379
Therrien, Nicole	MP 648	Ting, Lily.....	WP 691	Toren, Paul C.	TP 132
Therrien, Nicole	MP 647	Ting, Ying Sonia	MP 441	Torta, Federico.....	MP 256
Therrien, Nicole	MP 651	Ting, Ying Sonia	MP 250	Torta, Federico.....	MP 257
Therrien, Nicole	MP 649	Ting, Ying Sonia	MP 249	Tortorelli, Silvia.....	MP 347
Therrien, Nicole	MP 646	Tingler, Michael.....	MOG pm 4:10	Touboul, David.....	MP 295
Thevis, Mario	WP 078	Tintaru, Aura	ThOC am 09:30	Touboul, David.....	ThP 269
Thibault, Pierre	ThP 516	Tipney, Hannah.....	TP 323	Touboul, David.....	TP 016
Thibault, Pierre	ThP 499	Tippens, Heather.....	MP 526	Toutoungi, Danielle E.	TP 134
Thibault, Pierre	MOA pm 3:30	Tippens, Heather.....	WP 136	Townsend, Paul A.	ThP 676
Thibault, Pierre	ThP 648	Tipple, Christopher	WP 193	Townsend, R. Reid	TP 540
Thiboutot, Diane	ThP 117	Tipthara, Pornpimol	MP 272	Townsend, Timothy	MP 377
Thiele, Roland.....	WP 159	Tipton, Jeremiah D.	ThP 605	Toyoda, Michisato.....	ThP 084
Thiesen, Hans-Juergen.....	TP 615	Tipton, Jeremiah D.	WOA am 10:10	Toyoda, Michisato.....	ThP 068
Thiesen, Hans-Juergen.....	WP 596	Tirado, Marcus.....	WP 498	Toyoda, Michisato.....	MP 370
Thiesen, Hans-Juergen.....	ThP 652	Tirado, Marcus.....	MOC pm 2:30	Toyoda, Michisato.....	TP 417
Thirumoorathi, Ramalingam	ThP 151	Tischler, Marc	MP 404	Toyoda, Michisato.....	ThP 067
Thissen, Roland	WP 060	Titsch, Craig	MP 139	Toyoda, Michisato.....	ThP 066
Thomas, Andreas	WP 078	Tiwari, Pramod K.....	ThP 689	Toyoda, Michisato.....	TP 418
Thomas, John J.....	TP 104	Tkachenko, Valery.....	WP 361	Tozer, Gillian	WP 444
Thomas, Paul.....	ThP 037	To, Thao	WP 351	Traber, Maret.....	ThP 229
Thomas, Paul.....	TP 553	Tobar, Maria	WP 196	Trainer, Michael	MP 109

INDEX OF AUTHORS

Tran, Bichsa	MP 136	Tse, Francis LS	TP 237	Tzeng, Shin-Cheng	ThP 673
Tran, Daniel	ThP 134	Tseng, Chiao-Li	MP 315	Tzou, Wen-Shyong	WP 387
Tran, Diana	MP 535	Tseng, George C.	MOC am 08:50	Tzou, Wen-Shyong	ThP 389
Tran, Duc	MOB am 08:50	Tseng, Mei-Chun	TP 264	Tzouras, Manuel	WOF pm 2:30
Tran, Giang	ThP 098	Tseng, Yao-Hsin	WOC pm 3:50	Uboh, Cornelius	WP 099
Tran, John C.	WOA am 10:10	Tseng, Yao-Hsin	WP 543	Uboh, Cornelius	ThP 374
Tran, John C.	ThOD am 09:10	Tsentlovich, Yuri	ThP 531	Ubukata, Masaaki	TP 345
Tran, John C.	WP 090	Tshudy, Dwight J.	WP 313	Ubukata, Masaaki	MP 135
Tran, John C.	TP 553	Tso, Jerry	MP 361	Ubukata, Masaaki	TP 346
Tran, Kimberly	TP 634	Tsou, Chih-Chiang	TP 378	Ubukata, Masaaki	MP 240
Tran, ViLinh	ThP 537	Tsuchihashi, Hitoshi	WP 171	Ubukata, Masaaki	ThP 218
Trang, Tran Huyen	WP 630	Tsuge, Koichiro	WP 647	Ucakturk, Ebru	WOG am 09:30
Trass, Matt	TP 314	Tsui, Man	TP 168	Uchida, Kaoru	MP 538
Trauger, Sunia	MP 608	Tsukazaki, Yasuko	WP 266	Uchida, Masaki	WP 537
Traviss, Nora	ThP 348	Tsunoi, Yoshimasa	MP 404	Uchikata, Takato	ThP 283
Trefjord, Terese	ThP 355	Tsuyama, Naohiro	WP 121	Uchikata, Takato	ThP 282
Tregembo, John	ThP 055	Tsuyama, Naohiro	WP 285	Uchikata, Takato	ThP 281
Tremblay, Marie-Chantale	MP 149	Tsuyama, Naohiro	WP 295	Uchino, Kiichiro	ThP 062
Tremblay, Patrice	WOF am 10:10	Tsuyama, Naohiro	WP 296	Uchiyama, Toshiyuki	ThP 058
Tremblay, Patrice	ThP 189	Tsuyama, Naohiro	ThP 243	Udeshi, Namrata	TOA am 08:50
Tremblay, Patrice	ThP 215	Tsuyama, Naohiro	MP 318	Udeshi, Namrata	ThP 500
Tremblay, Patrice	WP 079	Tsuyama, Naohiro	TP 011	Ueberheide, Beatrix	WOG am 09:50
Tremblay, Patrice	MP 025	Tsybin, Yury O.	WP 009	Ueberheide, Beatrix	MP 461
Tremblay, Patrice	ThP 172	Tsybin, Yury O.	MP 096	Uechi, Guy	TP 628
Tremblay, Patrice	WP 144	Tsybin, Yury O.	MP 557	Ueckert, Torsten	WOA pm 3:30
Tremblay, Patrice	WP 137	Tsybin, Yury O.	TP 101	Ueckert, Torsten	ThP 401
Tremontin, Stacy	TP 297	Tsybovsky, Yaroslav	TP 543	Ueckert, Torsten	MP 453
Tremintin, Guillaume	ThP 646	Tu, Chengjian	ThP 678	Ueckert, Torsten	ThP 384
Tremintin, Stacy	MP 417	Tu, Chengjian	ThP 674	Ueda, Naomi	ThP 534
Trengove, Robert	ThP 284	Tu, Chengjian	ThOF pm 3:10	Ueda, Yoji	MP 314
Trengove, Robert	ThP 225	Tu, Chengjian	ThP 599	Ueda, Yoji	TOC am 10:10
Trengove, Robert	WP 232	Tucker, Kevin	ThP 416	Ueda, Yoshihisa	ThP 218
Trent, M. Stephen	MP 234	Tucker, Mark	MOE pm 3:50	Uetrecht, Charlotte	WP 543
Tretter, Verena	WP 471	Tucker, Stephen	MP 640	Ugarov, Michael	MP 097
Tretyakov, Kirill	MP 077	Tummala, Manorama	TP 117	Ugarov, Mikhail	MP 100
Tretyakov, Kirill	WP 053	Turck, Chris	Special 001	Uittenbogaard, Joost P.	ThP 651
Tretyakova, Natalia	MP 629	Turck, Chris	ThOA pm 2:50	Ulbrich, Karel	ThP 418
Trevitt, Adam	TOC pm 3:10	Turecek, Frank	MP 342	Ullmann-Zeunert, Lynn	MP 520
Trevitt, Adam J.	MP 243	Turecek, Frantisek	TP 055	Umemura, Yoshikatsu	MP 119
Trevitt, Adam J.	ThOB pm 2:50	Turecek, Frantisek	MP 343	Unanue, Emil R.	ThP 653
Trimaille, Thomas	TP 339	Turecek, Frantisek	MP 341	Underwood, Mark	MP 274
Trimaille, Thomas	TP 338	Turecek, Frantisek	WP 038	Underwood, Mark	MP 276
Trimmer, James	TP 579	Turecek, Frantisek	MP 348	Unger, Steve	WP 097
Trimpin, Sarah	MP 009	Turesky, Robert	ThP 199	Unwin, Richard D.	WP 636
Trimpin, Sarah	MP 014	Turesky, Robert	WP 680	Upham, Jacqueline	MP 421
Trimpin, Sarah	MOD am 10:10	Turiák, Lilla	TP 528	Upton, Patricia	WP 675
Trimpin, Sarah	ThP 346	Turk, Gregory	WP 290	Urbanczyk-Wochniak, Ewa	ThP 301
Trimpin, Sarah	MP 265	Turk, John	MP 078	Urbanczyk-Wochniak, Ewa	ThP 302
Trimpin, Sarah	MP 016	Turker, Sarah	ThP 429	Urh, Marjeta	WP 620
Trimpin, Sarah	ThP 545	Turner, Glenn	WP 426	Urh, Marjeta	WP 610
Trimpin, Sarah	MP 597	Turner, Jeffrey L.	ThP 465	Urlaub, Henning	MP 636
Trimpin, Sarah	MP 064	Turner, Kevin B.	TP 489	Urlaub, Henning	ThOD pm 2:30
Trinidad, Jonathan C.	TP 440	Turner, Mark	TP 438	Urlaub, Henning	WP 627
Trinkaus-Randall, Vickery	MP 484	Turner, Matthew	ThP 037	Ursem, Nicolette	TP 595
Tripathi, Pallavi	TP 475	Turner, Meredith	WP 645	Usansky, Helen	WP 254
Trnka, Michael	WP 587	Turney, Kevin	ThP 446	Ushijima, Masaru	TP 406
Trojer, Lukas	ThP 570	Turnipseed, Sherri B.	TP 375	Ushijima, Masaru	WP 167
Trojer, Lukas	MP 231	Tuscholska, Monika	MP 202	Ute, Koichi	MP 193
Trojer, Patrick	TP 430	Tuskan, Gerald	TP 640	Utsunomiya, Shinichi	ThP 383
Trost, Matthias	ThP 648	Tuskan, Gerald	MOE pm 3:30	Uzasci, Lerna	TP 590
Trötmüller, Martin	ThP 263	Tuskan, Gerald	TP 388	Vachani, Anil	WP 686
Trudigan, David	MP 517	Twaddle, Nathan C.	TP 251	Vachani, Anil	ThOF pm 2:50
Trufelli, Helga	WP 094	Tweedie-Cullen, Ry	TP 551	Vachet, Richard	WP 004
Trufelli, Helga	TP 261	Twohig, Marian	TP 094	Vachet, Richard	MP 628
Truong, Tai	MP 083	Twomey, Rachel	WP 682	Vachet, Richard	ThP 146
Trupp, Miles	ThOA pm 3:10	Tye, Roger	TP 364	Vachet, Richard	MP 635
Truscott, Roger JW	ThP 276	Tyers, Mike	MP 610	Vachet, Richard	ThP 151
Tsai, Chia-Feng	MP 485	Tyers, Mike	ThP 406	Vachet, Richard	ThP 556
Tsai, Chia-Feng	WP 473	Tykwinski, Rik	TP 289	Vachet, Richard	ThP 147
Tsai, Chia-Wei	WP 205	Tymiak, Adrienne	TP 102	Vachet, Richard	WP 542
Tsai, Fuu-Jen	MP 549	Tymiak, Adrienne	TOC am 10:10	Vachet, Richard	WP 655
Tsai, Ming-Daw	ThP 505	Tymiak, Adrienne	TP 483	Vachet, Richard	WP 016
Tsai, Yihsuan	MP 441	Tymiak, Adrienne	MP 314	Vachon, Jérôme	WP 338
Tsapraillis, George	WP 657	Tyrefors, Niklas	WP 314	Vachon, Pascal	WP 278
Tschaplinski, Timothy	TP 640	Tysk Rönnqvist, Marie	MP 132	Vaclavik, Lukas	WP 222
Tschaplinski, Timothy J.	MP 319	Tzanani, Nitzan	MP 397	Vaghjiani, Ghanshyam	TP 303
Tse, Francis LS	WP 102	Tzeng, Shin-Cheng	ThP 598	Vahid, Mojdeh	TP 240

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Vahidi, Siavash	MP 623	Van Hoven, Raymond	TOB pm 2:30	Venugopal, Abhilash	ThP 696
Vaishampayan, Parag	TP 709	van Iersel, Marlou L.P.S.	MOF pm 3:10	Venugopalan, Abhilash	ThP 592
Vaitheeswaran, Bhavapriya	WP 235	van Klaveren, Rob	ThP 650	Verbeck, Guido F.	WOC pm 2:50
Valadez, J. Gerardo	WP 683	van Klaveren, Rob J.	MP 681	Verbeck, Guido F.	WP 033
Valaskovic, Gary	TOG pm 2:50	Van Natta, Kristine	TP 085	Verbeck, Guido F.	ThP 075
Valaskovic, Gary	WP 142	Van Remoortere, Alexandra	ThP 444	Verbeck, Guido F.	MP 008
Valaskovic, Gary	ThOD am 09:10	van Remoortere, Alexandra	WP 436	Verbeck, Guido F.	ThP 064
Valaskovic, Gary	MP 222	van Remoortere, Alexandra	TP 413	Verbeck, Guido F.	WP 286
Valaskovic, Gary	TP 682	Van Schil, Paul	TP 146	Verbeeck, Nico	TP 410
Valaskovic, Gary	MP 221	van Schravendijk, Marie Rose	TP 114	Verbeeck, Nico	TP 411
Valaskovic, Gary	ThP 206	Van Stipdonk, Michael J.	MOC pm 4:10	Verber, Matthew	ThP 030
Valaskovic, Gary A.	TOG pm 2:30	van Velde, Jan	ThOC am 10:10	VerBerkmoes, Nathan	MP 212
Valeja, Santosh G.	MP 558	van Vilsteren, Frederike G.I.	TP 592	VerBerkmoes, Nathan	TP 621
Valente, Kerolyn S.	MP 239	Van Wijk, Klaas J.	MOE pm 3:10	Verberkmoes, Nathan C.	MP 531
Valentin, Henry	ThP 301	Van Wijk, Klaas J.	WP 405	Verberkmoes, Nathan C.	ThOC pm 3:50
Valentine, Stephen	TP 145	van Wijk, Sjoerd	MP 514	Vercelli, Donata	WP 657
Valentine, Stephen	TP 142	van Zeijl, René	TP 413	Verhaert, Peter	MP 533
Valentine, Stephen	WOB am 10:10	van Zeijl, René	ThP 444	Verhage, Matthijs	MP 614
Valentine, Stephen J.	MP 057	van Zeijl, René J.M.	WP 436	Verkerk, Udo	ThP 006
Valentine, Stephen J.	ThP 043	Vanacore, Roberto	WP 441	Verkerk, Udo	ThP 004
Valentine, Stephen J.	TOE pm 2:30	VanAlst, Nadine	TP 558	Verkerk, Udo	MP 085
Valkenborg, Dirk	TP 384	Vanden Heuvel, Justine	ThP 310	Verkerk, Udo H.	ThP 017
Valle de Sousa, Marcelo	MP 615	Vanderford, Brett J.	WP 311	Verma, Amrisha	WP 409
Vallejos, Andrew	WP 709	VanDerRiet, Jeffrey	MP 419	Vernachio, John	WP 279
Valsamakis, Alexandria	MP 552	Vandervoort, Christine	WP 114	Vernhout, René	MP 681
Van, Jenny	ThP 098	Vanduijn, Martijn	ThP 650	Verrijzer, Peter	TP 714
Van Amerom, Friso H. W.	MP 067	Vanduijn, Martijn	MP 594	Vertes, Akos	WP 293
Van Amerom, Friso H.W.	ThP 074	Vanduijn, Martijn M.	MP 681	Vertes, Akos	WP 297
Van Amerom, Friso H.W.	ThP 027	Vandyck, Séverine	WP 429	Vertes, Akos	WP 294
Van Berkel, Gary J.	WOF am 09:50	VanEyk, Jennifer	WP 520	Vesper, Hubert	WP 648
Van Berkel, Gary J.	TP 424	vanGool, Alain	TP 607	Vezina, Louis-P	ThP 655
Van Berkel, Gary J.	ThOG pm 4:10	Vanhaesebroeck, Bart	ThP 507	Vibenholt, Anni	MP 027
Van Berkel, Gary J.	MP 037	Vanlandingham, Michelle	TP 320	Vibenholt, Anni	MP 026
Van Berkel, Gary J.	MP 319	Vanlandingham, Michelle M.	TP 251	Vickery, Thad	MP 251
Van Berkel, Gary J.	TP 408	VanOrden, Steve L	MP 084	Victor, Bjorn	MP 444
van Bortel, Jos	ThP 305	Vanschoiack, Andrew	TP 181	Vidavsky, Ilan	ThP 482
van Breemen, Richard	WP 352	Vanselow, Christopher	MP 608	Vidova, Veronika	WP 541
van Breemen, Richard B.	WP 152	Vanselow, Christopher	TP 555	Viegas, Ivan	TP 172
van Breemen, Richard B.	ThP 292	Varedi, S. Marjan	TP 541	Viel, François	TP 269
van Breemen, Richard B.	ThP 175	Varesio, Emmanuel	ThP 367	Viel, François	TP 268
van Breemen, Richard B.	TP 275	Varesio, Emmanuel	TP 317	Viel, François	TP 257
van Breemen, Richard B.	WP 147	Varesio, Emmanuel	ThP 111	Viel, François	TP 272
van Breemen, Richard B.	WP 348	Varesio, Emmanuel	ThP 379	Viel, François	TP 258
van Breemen, Richard B.	WP 252	Varesio, Emmanuel	MOF am 08:30	Viel, Stéphane	TP 339
van Breemen, Richard B.	WP 345	Varesio, Emmanuel	ThP 473	Viel, Stéphane	TP 338
van Breemen, Richard B.	TP 227	Varga, Elisabeth	MP 423	Vielhaber, Torsten	TP 214
van Breemen, Richard B.	TP 136	Varghese, Johnson	TP 124	Vierling, Elizabeth	WP 578
van Breemen, Richard B.	ThP 661	Varghese, Johnson	ThP 486	Vigh, Gyula	ThP 546
van Breemen, Richard B.	TP 278	Varmus, Harold E.	ThP 592	Vigneau, Olivier	MP 400
van Breemen, Richard B.	WP 274	Varoglu, Mustafa	TP 246	Villard, Claude	MP 567
van Breemen, Richard B.	ThP 321	Vasicek, Lisa	MP 627	Vincent, Catherine	WP 011
van Breemen, Richard B.	WP 012	Vasil'ev, Yury V.	WP 064	Vincent, Helen	WOB pm 3:10
van Breemen, Richard B.	WP 123	Vatasever, Bilgin	MP 503	Vincenti, Marco	TP 326
Van De Goor, Tom	ThP 570	Vath, Marianne B.	ThP 186	Vincenti, Marco	TP 315
Van de Plas, Raf	TP 410	Vaudel, Marc	MP 460	Vincow, Evelyn S.	WP 046
Van de Plas, Raf	TP 411	Vaudel, Marc	MP 495	Viner, Rosa	WOD am 09:10
Van de Ven, Ann L.	MP 673	Vavrek, Marissa	TOF pm 4:10	Viner, Rosa	MP 666
van de Wetering, Marc	TOG am 09:30	Vaz, Alfin	WP 276	Viner, Rosa	WP 615
Van Den Brink, Oscar F.	ThOC am 10:10	Vaz, Boniek G.	TP 306	Viner, Rosa	WOD am 09:50
Van Den Brink, Oscar F.	TP 344	Vaz, Boniek Gontijo	TP 291	Viner, Rosa	TP 170
van den Heuvel, Sander	TP 549	Vazquez, Randy	MP 659	Vinogradov, Evgueny	MP 538
Van Der Burgt, Yuri E.M.	TP 649	Vecer, Jaroslav	TP 476	Vinueza, Nelson R.	ThOB pm 3:10
Van Der Burgt, Yuri E.M.	WP 653	Veenstra, Timothy	MP 677	Vircks, Kyle	TP 049
van der Meulen, Eric	MOF pm 3:10	Vékey, Károly	TP 528	Visentainer, Jesuí Vergílio	MP 041
van der Oost, John	TP 156	Velanki, Sreepriya	ThP 184	Visentainer, Jesuí Vergílio	ThP 289
Van Der Post, Sjoerd	ThP 487	Velgaard Olsen, Jesper	TP 582	Visentin, Sonja	MP 660
van der Rest, Guillaume	WP 488	Vellaichamy, Adaikkalam	MP 673	Vishnudas, Vivek K.	TP 663
van der Riet, Jeffrey	MP 421	Vénien-Bryan, Catherine	MP 640	Vishnudas, Vivek K.	TP 664
van der Schors, Roel C.	MP 614	Venkateshwara, Muthusubramanian	ThP 522	Visintainer, Dawn	ThP 315
van der Vies, Saskia M.	WP 433	Venkateswaran, Kasthuri	TP 709	Vismeh, Ramin	TP 192
van der Weiden, Marcel M.	TP 667	Venne, Karine	WP 339	Vissers, Hans	ThOE am 09:50
van Dijk, Evert	TP 595	Venot, Andre	TP 175	Vissers, Johannes PC	ThP 614
Van Dongen, William	MP 299	Venot, Andre	TP 184	Vissers, Johannes PC	WP 473
Van Duijn, Esther	TP 156	Venter, Andre	TP 008	Vissers, Johannes PC	ThP 681
Van Eyk, Jennifer	WP 511	Venter, Andre	MP 029	Vissers, Johannes PC	WP 589
van Hal, Henk J.M.	MOF pm 3:10	Venugopal, Abhilash	ThP 697	Vitek, Olga	TP 698
				Vivekanandan, Anuradha	ThP 672

INDEX OF AUTHORS

Vladimirov, Gleb	MP 102	Wagner, Michel	ThP 367	Wang, He	TP 019
Vladimirov, Gleb	ThP 077	Wagner, Michel	ThP 111	Wang, He	MP 048
Vladimirov, Gleb	MP 101	Wagner, Moritz	ThOG am 09:30	Wang, He	TP 035
Vladimirov, Gleb	MP 094	Wagner, Moritz	MP 517	Wang, Hong	ThP 629
Vlaun, David	ThP 202	Wagner, Moritz	MP 308	Wang, Hong	ThP 582
Vlok, Mare	ThP 662	Wahl, Markus C.	ThOD pm 2:30	Wang, Hongxia	TP 446
Voelker, Troy	WP 139	Wahlander, Asa	WP 388	Wang, Hsing-lin	TP 325
Voelker, Troy	ThP 177	Wakamiya, Tateaki	MP 116	Wang, Huan	WP 639
Voelker, Troy	WP 669	Wakimoto, Megumi	TP 011	Wang, Huan	ThP 693
Voelker, Troy	TP 280	Wakui, Masanori	TP 406	Wang, Jerry	WP 104
Voelker, Troy	TP 259	Wakui, Masatoshi	WP 439	Wang, Jerry	ThP 120
Vogel, John	ThP 164	Walbot, Virginia	ThP 304	Wang, Jessica	MP 402
Vogel, John	WP 045	Walch, Axel	TP 403	Wang, Jia	MP 411
Vogelhuber, Kristen	ThOB am 08:50	Walder, Bernard	MP 028	Wang, Jian	ThP 498
Vogeser, Michael	WP 155	Waldera, Daniel	MP 523	Wang, Jian	MP 373
Vogl, Thomas	MOG pm 3:30	Waldon, Daniel	TP 241	Wang, Jian	ThP 405
Vogt, Frederick G.	ThP 180	Wales, Thomas	WP 565	Wang, Jianhong	MP 175
Vogt, Johannes	MP 269	Wales, Thomas	TP 502	Wang, Jianyao	WP 251
Vogt, Susanne	TP 318	Wales, Thomas E.	TP 482	Wang, Jin	ThOD pm 2:50
Vogt, Thomas	TP 607	Walian, Peter J.	TP 570	Wang, Jin	WP 279
Voillard Bourgoin, Sandrine E.	ThP 495	Walker, Aaron	WP 259	Wang, Jing	TP 598
Voisin, Sebastien	MP 688	Walker, Bennett N.	WP 297	Wang, Jin-Liang	ThOC am 09:10
Volmer, Dietrich A.	TOB am 09:50	Walker, Hunter	WP 212	Wang, Jinyuan	TP 354
Volmer, Dietrich A.	MP 654	Walker, Hunter	MP 285	Wang, Jinyuan	MP 405
Volny, Michael	ThP 418	Walker, Nykia	TP 693	Wang, Jinyuan	TP 372
von Bergen, Martin	WP 628	Walker, Steven H.	TP 527	Wang, Jinyuan	TOG pm 3:30
von Haller, Priska	MP 522	Wallace, Nicole	MP 601	Wang, Jon	TP 369
von Sydow, Lena M	MP 132	Wallace, William E.	WP 291	Wang, Jun	TP 244
Vonderhaar, Barbara	MP 677	Walley, Justin	MOE pm 2:50	Wang, Jun	WP 263
VonTungeln, Linda S.	TP 320	Walling, Les	WP 006	Wang, Junhua	MP 472
Voordouw, Gerrit	TP 301	Walmsley, Scott	TP 707	Wang, Junhua	ThP 439
Voorhees, Kent	ThP 348	Walmsley, Scott J.	TP 609	Wang, Junhua	MP 473
Voorhees, Kent	MP 011	Walpen, Silvio	ThP 208	Wang, Kelly	MP 175
Vorkas, Panagiotis A.	ThP 250	Walsh, Callee	TP 423	Wang, Kevin	WP 649
Vorobyev, Aleksey	WP 009	Walsh, Warren	ThP 092	Wang, Laixin	TP 280
Vorontsov, Yegor	MP 497	Walter, Jens	MP 555	Wang, Laixin	ThP 470
Vortmeier, Gerrit	MP 271	Walter, Peter	WP 042	Wang, Leheng	WP 073
Vougas, Kostas	ThP 676	Walter, Philippe	WP 407	Wang, Le-Heng	WP 404
Vouros, Paul	MP 305	Walters, C. Robin	WP 279	Wang, Lei	TP 674
Vouros, Paul	MP 153	Walters, James J.	ThP 465	Wang, Li Chun	WP 682
Vouros, Paul	TP 233	Walton, Barbara	WP 033	Wang, Lianshui	WP 383
Vouros, Paul	ThP 376	Walton, Justin	WP 663	Wang, Lily	TP 143
Vouros, Paul	TP 312	Walworth, Matthew	MP 036	Wang, Linan	WP 708
Vouros, Paul	WOB am 09:30	Walzer, Mathias	ThP 410	Wang, Liwen	WOG am 10:10
Voziyan, Paul	WP 441	Walzthoeni, Thomas	WP 583	Wang, Lu	MP 477
Vrkoslav, Vladimir	MP 245	Wan, Cuihong	ThP 610	Wang, Mengmeng	MP 507
Vu, Huy Khang	ThP 189	Wan, Terence S. M.	MP 157	Wang, Michael Zhuo	WP 284
Vucic, Domagoj	ThP 501	Wang, Alexandre	TP 328	Wang, Nan	MP 578
Vuckovic, Dajana	WOF am 09:30	Wang, Alexandre	WP 268	Wang, Nan	TP 593
Vuckovic, Dragan	ThP 361	Wang, Alexandre	TP 327	Wang, Nan	MP 565
Vuckovic, Dragan	WP 168	Wang, Beixi	MP 009	Wang, Ning	MOC am 09:30
Vuitton, Veronique	WP 060	Wang, Beixi	MP 016	Wang, Pei	MP 656
Vuong, Huy	WP 367	Wang, Beixi	MP 014	Wang, Pei	WP 507
Waaiker, Cathelijne	WP 436	Wang, Benlian	TP 543	Wang, Perry	MP 416
Wada, Yasuhiro	ThP 290	Wang, Bin	TP 477	Wang, Phillip	TP 276
Wada, Yoshinao	TP 515	Wang, Chen Chen	MP 692	Wang, Qi	MP 282
Waddell, Keith	TP 635	Wang, Chengtao	WP 309	Wang, Rong	TP 463
Waddell, Keith	MP 694	Wang, Chen-Yu	TP 245	Wang, Rong	WP 696
Waddell, Keith	ThP 192	Wang, Chen-Yu	WP 249	Wang, Rong	MP 491
Waddell, Keith	WOD pm 3:50	Wang, Chieh-Huei	TP 638	Wang, Rong	WP 416
Waddell, Keith	WP 506	Wang, Chuan	TOB am 09:30	Wang, Rui	TP 004
Waddell, Keith	WP 505	Wang, Chunhua	TP 697	Wang, Rui	ThP 319
Waddington, Lisa	MP 421	Wang, Da	ThP 007	Wang, Sheng-ping	ThP 533
Waddington, Lisa	MP 419	Wang, Dong	TP 382	Wang, Sheng-Ping	TP 693
Wade, Mary	ThOC pm 4:10	Wang, Dongxia	MP 392	Wang, Shih-Fan	TP 347
Wadhawan, Rajvir	WP 422	Wang, Dongxia	MP 391	Wang, Shihong	WP 283
Waelkens, Etienne	TP 410	Wang, Dongxue	ThP 304	Wang, Shunhai	ThP 643
Waelkens, Etienne	TP 411	Wang, Fen	MP 237	Wang, Shunhai	WOG am 08:50
Wagdy, Azza	ThP 172	Wang, Feng	WP 108	Wang, Shunhai	MP 492
Wager-Miller, James	MP 265	Wang, Guanbo	ThP 664	Wang, Tuobin	ThP 633
Wager-Miller, James	MP 016	Wang, Guangdi	MP 675	Wang, Wan	WP 104
Wager-Miller, James	MP 014	Wang, Guanghui	WP 406	Wang, Wan	ThP 120
Wagner, Andrew	WP 259	Wang, Guanghui	WP 696	Wang, Wei	MP 384
Wagner, David S.	TOF pm 2:30	Wang, Haijian	TP 370	Wang, Wei	WP 401
Wagner, David S.	TOF pm 3:30	Wang, Haipeng	WP 073	Wang, Wei	TOB pm 2:50
Wagner, David S.	ThP 422	Wang, Hao	WP 467	Wang, Wei-Han	WP 618
Wagner, J. Richard	ThP 492	Wang, Hay-Yan J.	ThP 271	Wang, Weimin	WP 253

INDEX OF AUTHORS

Wang, Weixun	WP 586	Watkins, Steven	ThOA pm 3:10	Wells, Mitch	ThP 087
Wang, Wen-horng	MP 480	Watrous, Jeramie	TP 409	Wells, Mitch	MP 376
Wang, Wenhong	TP 533	Watrous, Jeramie	MOD pm 2:30	Wells, Sandra M	WP 301
Wang, Wen-Hui	TP 535	Watrous, Jeramie	MOD am 09:10	Wen, Bo	WOG pm 4:10
Wang, Wenping	WP 073	Watrous, Jeramie	ThOC pm 3:10	Wen, Jianzhong	TOE am 09:30
Wang, Xi Simon	ThP 698	Watrous, Jeramie	TOD am 09:30	Wen, Zhihui	WP 076
Wang, Xia	TOA pm 2:30	Watson, Caroline	WP 392	Wendelburg, Brian	TOB am 08:50
Wang, Xiaofeng	MOE pm 2:30	Watson, Caroline	ThP 476	Wendt, Georg	MP 679
Wang, Xiaojing	TP 676	Watson, Heather M.	WP 489	Wendt, Patricia	WP 165
Wang, Xiaojing	ThOA am 08:30	Watson, Mike	ThP 065	Weng, Naidong	WP 667
Wang, Xu	TOD am 09:30	Watts, Peter	ThP 049	Weng, Naidong	WP 253
Wang, Xu	MP 287	Waybright, Nicole	MP 551	Weng, Naidong	ThP 214
Wang, Ya-Juan	MP 098	Weatherly, Brent	MP 515	Weng, Rueyhung Roc	MP 439
Wang, Yan	TP 554	Weatherly, D Brent	WP 393	Wenger, Craig	MOA am 09:10
Wang, Yan-Hong	ThP 224	Weatherly, D Brent	WP 592	Wenger, Craig	ThOE am 08:50
Wang, Yan-Hong	WP 359	Weatherly, D. Brent	WP 392	Wenger, Craig	TP 400
Wang, Yi	WOD am 10:10	Webb, Ian	WP 035	Wenger, Craig	TP 461
Wang, Yi	TP 580	Webber, Nathaniel	ThP 043	Wenger, Craig D.	TOE pm 3:10
Wang, Yi	ThP 641	Webber, Nathaniel	TOE pm 2:30	Wenk, Markus	ThP 260
Wang, Yi	WP 522	Weber, Rick	MP 449	Wenk, Markus	TOC pm 3:50
Wang, Ying	MOA am 08:50	Weber, Rick	ThP 402	Wenk, Markus R.	MP 257
Wang, Ying	WP 263	Weber, Rick	ThP 385	Wenk, Markus R.	MP 256
Wang, Ying	TP 244	Webhofer, Christian	ThOA pm 2:50	Wenthold, Paul	WP 048
Wang, Ying	MP 357	Wedge, David	MP 451	Wenthold, Paul G.	WP 047
Wang, Yinsheng	MP 304	Wegrzyn, Jill	WP 703	Wentzel, Daria	MP 172
Wang, Yinsheng	ThOD pm 2:50	Wehe, Christoph Alexander	TP 239	Werner, Alexandra	ThP 688
Wang, Yinsheng	TP 712	Wehr, Angela Y	WP 590	Werner, Carsten	MP 414
Wang, Yong	TP 481	Wehr, Tim	MP 216	Werner, Erwan	ThP 269
Wang, Yongdong	WP 107	Wei, Fan	TP 563	Werner, Peter	WP 506
Wang, Yongdong	MP 309	Wei, Hui	TP 483	Werner, Stephen L.	TOB am 09:10
Wang, Yongdong	MP 082	Wei, Junhua	TP 676	Werther, Wolfgang	WP 298
Wang, Yonghui	TP 115	Wei, Shasha	ThP 588	Wesdemiotis, Chrys	TP 333
Wang, Yuexi	WOA pm 3:10	Wei, Siwei	WP 216	Wesdemiotis, Chrys	MP 170
Wang, Yubin	TOC pm 2:30	Wei, Wei	MP 279	Wesdemiotis, Chrys	TP 329
Wang, Zhen	TP 575	Wei, Xianrong	WP 100	Wesdemiotis, Chrys	ThOC am 09:10
Wang, Zhenghe	WP 611	Wei, Xiaoli	TP 657	Wesdemiotis, Chrys	TP 131
Wang, Zhengtao	ThP 319	Wei, Xiaoli	TP 658	Wesdemiotis, Chrys	MP 267
Wang, Zhengtao	ThP 223	Wei, Xiaoli	TP 656	Wesdemiotis, Chrys	TP 347
Wang, Zhiqiang	WP 240	Wei, Xiaomei	WP 352	Wesdemiotis, Chrys	TOE am 08:50
Wanigasekara, Eranda	MP 169	Wei, Xin	TP 576	Wesdemiotis, Chrys	WP 337
Want, Elizabeth J	ThP 428	Weidmann, Simon	ThP 155	West, Brandi	WP 058
Want, Elizabeth J	MP 433	Weidner, Steffen M.	ThOC am 08:50	West, Graham M	MOB am 09:10
Want, Elizabeth J	ThOF pm 4:10	Weidt, Stefan	ThP 458	West, Graham M	MOA am 10:10
Want, Elizabeth J	MP 317	Weidt, Stefan	TP 559	West, Graham M	WP 614
Want, Elizabeth J	ThP 197	Weigel, Jason Weigel	WP 301	West, James	WP 462
Want, Elizabeth J	ThP 250	Weinberger, Klaus M.	MP 329	West, Kristin	WP 374
Ward, Christopher J.	TP 650	Weinberger, Klaus M.	MP 328	West, Kristin	WP 528
Ward, Malcolm A.	TP 675	Weindorf, Benjamin	MP 515	West, Paul R.	ThP 234
Ward, Malcolm A.	TP 686	Weinmann, Wolfgang	TP 318	Westaway, David	MP 337
Ward, Michael D.	ThP 197	Weinstock, David	ThP 521	Westlin, William	ThP 185
Warder, Scott E.	ThP 624	Weintraub, Susan T.	TP 393	Weston, Daniel	TP 134
Wariishi, Hiroyuki	WP 692	Weintraub, Susan T.	Special 002	Weston, Daniel J.	WP 413
Wariishi, Hiroyuki	WP 226	Weir-Hauptman, April M.	ThP 234	Weston, David	TP 640
Wariishi, Hiroyuki	ThP 421	Weis, David	TP 495	Weston, Jason	MP 452
Wariishi, Hiroyuki	ThP 242	Weisbecker, Carl S.	WP 110	Westphall, Michael	WP 015
Wariishi, Hiroyuki	TP 196	Weisbrod, Chad	TOD pm 2:30	Westphall, Michael S.	ThP 519
Wariishi, Hiroyuki	WP 231	Weisbrod, Chad	MP 512	Westphall, Michael S.	ThOE am 08:50
Wariishi, Hiroyuki	WP 215	Weisbrod, Chad	MP 105	Westphall, Michael S.	MP 572
Wariishi, Hiroyuki	TP 205	Weiskopf, Andrew	ThP 642	Westphall, Michael S.	ThOB pm 4:10
Warner, Ryan	MP 320	Weiskopf, Andy	TP 632	Westphall, Michael S.	TOE pm 3:10
Warrack, Bethanne	TP 102	Weiss, Louis	WP 609	Westphall, Michael S.	WP 011
Washburn, Michael	WP 468	Weiss, Louis	TP 587	Westphall, Michael S.	ThP 014
Washburn, Michael	WP 076	Weitz, Karl	MP 590	Westphall, Michael S.	ThP 522
Washietl, Stefan	WP 628	Weitz, Karl K.	WP 220	Westphall, Michael S.	TP 086
Washington, Mary Kay	TP 685	Weitz, Karl K.	ThP 211	Westra, Edze R.	TP 156
Wasowicz, Marcin	ThP 125	Welchman, Helen	WP 287	Wetterhall, Magnus	TP 604
Wassermann, Tobias	MOC pm 3:10	Weller, Harold	WP 259	Wetterhall, Magnus	ThP 615
Wassif, Christopher A.	ThP 690	Weller, Harold	ThP 186	Wetzel, Collin	MP 294
Watanabe, Jun	MP 120	Wellner, Daniel	MP 481	Wey, Emmanuel	ThP 596
Watanabe, Jun	MP 122	Wells, Edward	WP 097	Whalen, Erin J.	ThP 517
Watanabe, Jun	ThP 290	Wells, Lance	TP 526	Whalen, Kevin	ThP 213
Watanabe, Jun	WP 384	Wells, Lance	WOD am 09:10	Whalley, Christopher	TP 308
Watanabe, Jun	MP 165	Wells, Lance	ThP 476	Wheaton, Jessalynn	WP 103
Watanabe, Jun	WP 171	Wells, Mary	TP 241	Wheaton, Jessalynn	ThP 119
Watanabe, Kenichi	MP 655	Wells, Mary	TP 281	Wheeler, K.E.	ThP 608
Watanabe, Shiro	MP 655	Wells, Mary	WP 143	Whetton, Anthony	TP 453
Waters, James	MP 075				

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Whetton, Anthony D.	WP 636	Williams, Evan R.	WP 010	Witkowski, Chuck	WP 524
White, Carl	WP 508	Williams, Evan R.	MOB am 09:30	Witt, Matthias	ThP 360
White, Edward	WP 291	Williams, Jamelle	WP 047	Witt, Matthias	TP 300
White, Hayley	WP 232	Williams, Jared	MP 622	Witt, Matthias	MP 065
White, Jerry	WP 123	Williams, Jason	TP 652	Witt, Matthias	TP 292
White, Jerry J.	ThP 321	Williams, Jonathan	WP 589	Witte, Laura	ThP 257
White, Jessica	ThP 404	Williams, Jonathan P.	ThOB pm 3:50	Wittig, Ilka	ThP 688
White, Kevin D.	WP 075	Williams, Katherine	WP 638	Wittrig, Becky	TP 297
White, Mark	WP 616	Williams, Katherine	MP 668	Wittrig, Rebecca	ThP 358
White, Thomas	ThP 357	Williams, Lee	ThP 122	Wittrig, Rebecca	ThP 314
White, Thomas	WP 328	Williams, Lee	ThP 121	Wittrig, Rebecca E.	MP 417
Whiteaker, Jeffrey	TOA am 10:10	Williams, Lee D.	TP 251	Witzmann, Frank	WP 383
Whiteaker, Jeffrey	WP 513	Williams, Pamela	TP 423	Wleklnski, Michael	TP 019
Whiteaker, Jeffrey	TP 688	Williams, Peggy	WP 022	Wohleb, Robert	WP 155
Whiteaker, Jeffrey	WP 512	Williams, Renee	WP 190	Wohlgemuth, Jessica	MP 223
Whiteaker, Jeffrey	ThP 684	Williams, Robert M	WP 350	Wojcik, Roza	WP 080
Whiteaker, Jeffrey	WP 507	Williams, Russell	MP 669	Wojtyla, Andrzej	TP 093
Whiteaker, Jeffrey	WP 390	Williams, Ryan Williams	WP 706	Wolf, Robert N.	MP 108
Whiteaker, Jeffrey	MP 656	Williams, Tracie	TP 585	Wolfe, Brian J.	MP 348
Whiteaker, Jeffrey	MP 679	Williamson, Andrew	TP 453	Wolfe, Derek	ThP 030
Whitehouse, Craig M.	TP 072	Williamson, Brian	ThP 468	Wolfe, Jaclyn	TP 554
Whitelegge, Julian	WOA am 08:30	Williamson, Brian	MP 334	Wolff, Jeremy	WOD pm 2:30
Whitelegge, Julian	TP 555	Williamson, Brian	ThP 694	Wolff, Jeremy	TP 175
Whitelegge, Julian	MP 608	Williamson, John	ThP 513	Wolff, Jeremy	MP 561
Whitson, Sara	MP 098	Williamson, Yuping	ThP 324	Wolff, Jeremy J.	WP 350
Whitwell, Corbin	WP 635	Willis, Scooter	MOB am 09:10	Wolforth, Christopher	ThP 414
Wichlacz-Boidin, Céline	MOD pm 3:10	Willison, LeAnna N.	TP 475	Wolk, Arron	ThP 011
Wicke, Michael	MP 414	Williton, Kelly	MP 202	Wolk, Arron	MOC pm 4:10
Wicking, Charles	ThOC pm 4:10	Wilmes, Anthony	MP 078	Wolkoff, Peder	MP 027
Wickramasinghe, Yapa	TP 506	Wilson, Derek	ThP 543	Wolkoff, Peder	MP 026
Widjaja, Fanny	WP 191	Wilson, Derek	WP 564	Wollmann, Nadine	MP 158
Widjaja, Fanny	WP 022	Wilson, Ian	TP 134	Wollscheid, Bernd	ThOD am 09:30
Wiedenhef, Blake	TP 156	Wilson, Ian	WP 269	Wolpert, Ellen	ThP 117
Wiegand, Andreas	WP 082	Wilson, Ian	TP 243	Wolschin, Florian	TP 612
Wiegand, Andreas	MP 103	Wilson, Ian	TP 250	Wolski, Eryk	TP 403
Wiegand, Andreas	WOE pm 2:30	Wilson, Ian D.	WP 413	Wolstenholme, Rosalind	WP 194
Wiegand, Andreas	MP 093	Wilson, Ian D.	WP 666	Wolstenholme, Rosalind	WP 197
Wiegand, Andreas	WP 090	Wilson, Mark E.	ThP 182	Wolters, Dirk	WP 660
Wielsch, Natalie	MP 520	Wilson, Michael B.	ThP 241	Wolters, Dirk	TP 106
Wigginton, Jane	WP 031	Wilson-Grady, Joshua T.	TP 702	Wolters, Dirk	ThP 497
Wigginton, Jane	MP 194	Winkler, Dirk	MP 529	Wolters, Dirk	MP 539
Wight, Julie	WP 634	Winkler, Malcolm E.	MP 540	Won, Helen	MP 552
Wijeratne, Aruna	WP 332	Winkler, Wolfgang	ThP 157	Wong, April S. Y.	MP 157
Wijeratne, Aruna	WP 541	Winsett, Darrell	WP 675	Wong, Bryan M.	WOB am 09:30
Wijeratne, Aruna	ThP 190	Winter, Dominic	ThP 544	Wong, Chee-Hong	ThP 629
Wijeratne, Aruna B.	ThP 506	Winter, Dominic	TOA am 08:30	Wong, Chee-Hong	ThP 582
Wijesinghe, Dayanjan	ThP 273	Winter, Dominic	TOA pm 3:10	Wong, Eric	MP 330
Wijnants, Marc	MP 242	Winter, Dominic	TP 624	Wong, Guang William	WP 693
Wikoff, William	ThOA pm 3:10	Winters, Doug	MP 137	Wong, Jon	MP 413
Wikswow, John	TP 147	Wintrod, Patrick	MP 634	Wong, Jon	MP 402
Wilborn, Teresa	WP 261	Wirth, Mark	ThOF pm 2:30	Wong, Jon	TP 351
Wilcox, Bruce	TP 010	Wise, Stephen	WP 290	Wong, Judi	MP 674
Wilcox, Mark D.P.	MP 248	Wiseman, Justin	WP 308	Wong, Kent	WP 283
Wilcoxon, Keith	TP 674	Wiseman, Justin	TP 050	Wong, Man-Ling	TP 301
Wilcoxon, Keith	TP 589	Wiseman, Justin	MP 030	Wong, Philip	TP 281
Wild, Peter	MP 690	Wiseman, Justin M.	WP 419	Wong, Philip S.	MP 141
Wildgoose, Jason L.	ThP 046	Wishart, David	ThP 560	Wong, Richard	WP 153
Wildgoose, Jason L.	TP 121	Wishart, David	MP 337	Wong, Stephen	MP 257
Wiley, Joshua	TOB pm 4:10	Wishart, David S.	TOD am 08:30	Wong, Stephen	ThP 260
Wiley, Joshua	TP 076	Wishnok, John	WP 676	Wong, Stephen C.C.	ThP 287
Wilhide, Joshua	WP 207	Wishnok, John S.	WP 661	Wong, Venney	TP 470
Wilhide, Joshua	TOE am 10:10	Wiśniewski, Jacek R.	TP 641	Wongkongkathep, Piriya	MP 112
Wilhide, Joshua	ThP 654	Wissdorf, Walter	TP 070	Wongkongkathep, Piriya	MP 111
Wilkins, Charles L.	ThOC am 08:30	Wissdorf, Walter	TP 067	Wongkongkathep, Piriya	MP 365
Wilkins, Charles L.	MP 039	Wissdorf, Walter	TP 068	Wood, Curtis	WP 311
Wilkins, Charles L.	ThP 139	Wissdorf, Walter	MP 002	Wood, Troy	TP 651
Wilkins, John	TP 718	Wissdorf, Walter	TP 071	Wood, Troy	WP 673
Wilkins, John A.	ThP 350	Wissdorf, Walter	TP 069	Wood, Troy	WP 623
Wilkinson, Brendan	ThP 566	Wisztorski, Maxence	ThP 425	Wood, Troy	ThP 312
Wilkinson, Kevin	WP 095	Wisztorski, Maxence	MOD pm 3:10	Woodards, Nicole	MP 474
Willett, Gary D.	TP 350	Wisztorski, Maxence	TP 407	Wooden, Scott	ThOF am 08:30
Williams, Andrew	ThP 055	Wisztorski, Maxence	TOF pm 3:50	Woodin, Carrie	ThP 586
Williams, Antony	WP 361	Wisztorski, Maxence	WP 429	Woodroffe, M. Nicola	WP 432
Williams, Chester	ThP 528	Witkop, Greg	WP 426	Woodruff, Mark	MP 219
Williams, Christopher	MP 089	Witkowska, H Ewa	WP 608	Woods, Amina S.	TP 140
Williams, Cynthia	MP 694	Witkowska, H. Ewa	TP 570	Woods, Amina S.	WP 333
Williams, Dudley	ThP 091	Witkowska, H. Ewa	MP 668	Woods, Amina S.	ThP 427

INDEX OF AUTHORS

Woods, Amina S.....	ThP 272	Wu, Xinyan	WP 695	Xing, Jie.....	TP 357
Woods, Amina S.....	WP 431	Wu, Yan-Jie.....	TOD am 09:10	Xing, Jie.....	ThP 188
Woods, Lucy.....	ThP 671	Wu, Yiman.....	TP 200	Xing, Jie.....	WOG pm 2:30
Woods, Virgil.....	MOB pm 2:50	Wu, Zhixiang	ThP 464	Xiong, Bob	ThP 467
Woods Ignatoski, Kathleen M.	TP 523	Wylie, Phil.....	WP 070	Xiong, Chenqi	WP 108
Woods Jr., Virgil.....	TP 503	Wyndham, Kevin.....	WP 557	Xiong, Lei.....	TP 712
Woods Jr., Virgil L.....	WP 566	Wynne, Kieran.....	MP 283	Xiong, Xingchuang.....	TP 405
Woods, Jr., Virgil.....	MOB am 08:30	Wynne, Paul	ThP 284	Xiu, Liyun.....	WP 073
Woollfitt, Adrian R.....	ThP 394	Wynne, Paul	WP 232	Xiu, Li-Yun	TOD am 09:10
Woollfson, Derek	ThOE pm 3:50	Wypych, Jette.....	WP 521	Xu, Allan.....	ThP 371
Woroniecki, Witold	WP 258	Wysocki, Vicki.....	TP 181	Xu, Bibo.....	WP 671
Wortmann, Arno	MP 503	Wysocki, Vicki.....	WOE pm 3:30	Xu, Bibo.....	WP 126
Wotske, Marina.....	ThP 497	Wysocki, Vicki.....	WP 578	Xu, Chong-Feng	ThP 642
Wrana, Jeffrey	ThP 406	Wysocki, Vicki H.....	WOB pm 3:50	Xu, Dan Dan.....	TP 596
Wren, Scott.....	ThOB am 08:50	Wysocki, Vicki H.....	WP 503	Xu, Fangmin.....	TP 537
Wright, A. Dale	TP 235	Wysocki, Vicki H.....	WP 002	Xu, Guifen.....	TP 281
Wright, Bob W.	TP 296	Wysocki, Vicki H.....	MP 659	Xu, Guifen.....	WP 143
Wright, Brian.....	WP 348	Wysocki, Vicki H.....	MOC am 08:50	Xu, H. Eric.....	MOA am 10:10
Wright, Brian.....	TP 275	Wysocki, Vicki H.....	TP 647	Xu, Haili.....	WP 657
Wright, Brian.....	WP 345	Wysocky, Rebecca.....	WP 236	Xu, Hongliang	MP 133
Wright, Charlotte	ThP 229	Wytttenbach, Thomas	WOB am 09:50	Xu, Hongliang	MP 082
Wright, John.....	MP 134	Xavier, Dylan.....	ThP 609	Xu, Hongliang (Leo).....	WP 107
Wright, Jonathan P.	TP 077	Xenopoulos, Alex.....	ThP 637	Xu, Hongliang (Leo).....	MP 309
Wright, Katherine.....	MP 507	Xia, Jianguo.....	MP 337	Xu, Hua	ThP 695
Wright, Katherine.....	WP 669	Xia, Xiaoping	ThOF am 10:10	Xu, Hua	TP 395
Wright, Victoria.....	MP 060	Xia, Yang	WP 677	Xu, Hua	MP 454
Wrona, Mark.....	TP 231	Xia, Yu.....	ThP 053	Xu, Jane.....	WP 141
Wrona, Mark.....	TP 225	Xia, Yu.....	WP 008	Xu, Jiazhang.....	TP 244
Wrona, Mark D.	MOF am 09:50	Xia, Yu.....	WP 480	Xu, Jiazhang.....	WP 263
Wrona, Mark D.	WP 286	Xia, Yu.....	TP 171	Xu, Keyang.....	ThP 658
Wu, Changsheng.....	TP 254	Xia, Yu.....	WOD pm 3:30	Xu, Lin.....	MOF pm 2:50
Wu, Cheng-Hsien	WP 709	Xia, Yu.....	TP 376	Xu, Ling.....	MOG pm 2:50
Wu, Chih-Ching.....	WP 509	Xia, Yu.....	TP 002	Xu, Ling.....	MP 691
Wu, Ching	WP 205	Xia, Yuan-Qing.....	MOF am 08:50	Xu, May	MP 575
Wu, Chin-Lee.....	ThOA pm 4:10	Xia, Yuan-Qing.....	MP 139	Xu, Mingguo	WP 371
Wu, Chin-Lee.....	MP 330	Xia, Yuan-Qing.....	WP 092	Xu, Minjie.....	WP 482
Wu, Christine.....	ThOD am 08:30	Xia, Zanzian	TP 529	Xu, Pang	WP 108
Wu, Christine.....	TP 669	Xian, Feng.....	WP 081	Xu, Ping.....	MP 208
Wu, Christine C.....	WP 472	Xian, Feng.....	MP 558	Xu, Tao.....	ThP 407
Wu, Chun.....	TOD pm 4:10	Xian, Feng.....	TP 305	Xu, Wei.....	MP 047
Wu, Chunping.....	TP 288	Xiang, Fan.....	ThP 572	Xu, Wei.....	ThP 036
Wu, Chunping.....	TP 286	Xiang, Fan.....	MP 663	Xu, Wei.....	ThP 494
Wu, Cong.....	WP 579	Xiang, Fan.....	MP 672	Xu, Wei.....	TOE pm 4:10
Wu, Gaston J.....	WP 199	Xiang, Feng.....	MP 475	Xu, Xia	MP 677
Wu, Guey Shuang	TP 616	Xiang, Feng.....	TP 447	Xu, Xiaobin.....	ThP 666
Wu, Hsuan-Wen.....	ThP 271	Xiang, Feng.....	MP 474	Xu, Xiaobin.....	ThP 660
Wu, Huan-Ting	TP 264	Xiao, Guangqing.....	ThP 193	Xu, Xiaowei.....	TP 695
Wu, Jing	MP 661	Xiao, Junfeng.....	TP 204	Xu, Yafei	WP 254
Wu, Jing-Tao.....	WP 142	Xiao, Kunhong	MP 593	Xu, Yan.....	WP 249
Wu, John.....	MP 538	Xiao, Kunhong (Kevin)	TP 545	Xu, Yan.....	ThP 373
Wu, Lianming	ThP 180	Xiao, Li	WP 283	Xu, Yang	ThP 419
Wu, Nian.....	ThP 436	Xiao, Nan	ThP 695	Xu, Yang	ThP 143
Wu, Paul W.	TP 110	Xiao, Yongsheng	WP 607	Xu, Yichuan	TP 353
Wu, Qihua.....	TOB am 09:30	Xiao, Zhen	MP 677	Xu, Ying.....	MP 605
Wu, R. R.....	ThP 003	Xiao, Zhongping.....	WOD pm 2:30	Xu, Ying.....	MP 637
Wu, Ranran.....	WP 034	Xie, Fan	TP 173	XU, Ying.....	ThOG am 09:50
Wu, Ronghu	MOA am 08:30	Xie, Helen	MOG pm 3:10	Xuan, Yue	MP 103
Wu, Ronghu	MP 440	Xie, Hongwei	ThP 573	Xuan, Yue	WOF pm 2:30
Wu, Sheng-Jiun (Sam).....	TP 485	Xie, Hongwei	WOF pm 3:50	Xuan, Yue	MP 453
Wu, Shiaw-lin	TP 107	Xie, Hongwei	WOG am 09:10	Xue, Baiyi	TP 120
Wu, Shiaw-Lin	ThP 627	Xie, Jianwei.....	MP 390	Xue, Chang	TOD pm 2:30
Wu, Shiaw-Lin	ThP 641	Xie, Ling	MP 205	Xue, Liang.....	TP 533
Wu, Shiaw-Lin	WP 569	Xie, Mingjie	MP 428	Xue, Liang.....	WP 114
Wu, Shiaw-Lin	TP 115	Xie, Xiaofeng.....	MP 083	Xue, Liang.....	WP 186
Wu, Shiaw-Lin	WOD am 10:10	Xie, Xiaolei.....	MP 661	Xue, Weihua.....	TP 381
Wu, Shuai.....	MP 275	Xie, Xiaolei.....	ThP 691	Xue, Yangkui	MP 272
Wu, Shuai.....	TP 506	Xie, Xiaolei.....	MP 663	Y. L. Ramachandra	ThP 696
Wu, Shuai.....	ThOD am 09:50	Xie, Xiaolei.....	TP 525	Y. L. Ramachandra	ThP 697
Wu, Shuai.....	MP 277	Xie, Yongming	TOB am 10:10	Yabuki, Masashi	MP 655
Wu, Si	TP 567	Xie, Yongming	ThP 188	Yamada, Kathryn A.....	TP 540
Wu, Si	MP 594	Xie, Zhen-Yu	TP 330	Yamada, Koji	WP 215
Wu, Si	WOA am 08:50	Xie, Zhongyu	MOA pm 3:10	Yamada, Masanori	WP 167
Wu, Si	TP 450	Xin, Baomin.....	WP 153	Yamaguchi, Ayumi.....	ThP 421
Wu, Wei.....	ThP 485	Xin, Lei	TP 441	Yamaki, Satoshi	WP 354
Wu, Wells	ThP 675	Xin, Lei	MP 457	Yamaki, Satoshi	TP 343
Wu, Wells W.	WP 499	Xin, Lei	MP 428	Yamamoto, Takashi	ThP 281
Wu, Wells W.	WP 658	Xin, Lei	WOD am 09:50	Yamamoto, Tatsuya	ThP 562

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Yamamoto, Yuki.....	MP 318	Yang, Rong-Sheng.....	TP 694	Yee, Dennis.....	MP 216
Yamashita, Kouwa.....	ThP 268	Yang, S. Jake.....	TP 167	Yeh, Cheng-Hsin.....	ThP 118
Yamashita, Toshiyuki.....	ThP 316	Yang, Samuel.....	WP 541	Yeh, Chih-Jen.....	MP 548
Yamauchi, Akira.....	ThP 534	Yang, Samuel.....	WP 332	Yeh, Hui-Jung.....	MP 324
Yamauchi, Mitsuo.....	ThP 565	Yang, Samuel.....	TP 066	Yeh, Yi-Cheun.....	ThP 147
Yamauchi, Yoshio.....	WP 180	Yang, Samuel.....	ThP 190	Yen, Cheng-Chieh.....	TP 324
Yamauchi, Yoshio.....	WP 179	Yang, Samuel.....	MP 154	Yen, Chia-Yu.....	MP 581
Yamazaki, Toshiyuki.....	WP 266	Yang, Samuel H.....	WP 335	Yen, Chia-Yu.....	MP 450
Yamazaki, Yuzo.....	ThP 534	Yang, Sheng-Hsiung.....	WP 199	Yen, Roger.....	MP 674
Yamazaki, Yuzo.....	TP 342	Yang, Song.....	MP 332	Yen, Ten-Yang.....	MP 674
Yan, Bo.....	ThP 146	Yang, Wen-Bin.....	TP 166	Yende, Sachin.....	WP 641
Yan, Ci.....	MP 126	Yang, Xi.....	WP 229	Yeo, Injoon.....	ThP 342
Yan, Cunyu.....	MP 653	Yang, Xiang-Lei.....	TP 496	Yeo, Leslie.....	ThOG pm 3:10
Yan, Fangfei.....	TP 107	Yang, Xiaohan.....	TP 640	Yeo, Sung Hoon.....	WP 221
Yan, Funing.....	WP 609	Yang, Xiaohui.....	TP 027	Yergey, Alfred L.....	ThP 690
Yan, Junfeng.....	TP 027	Yang, Xiao-Hui.....	ThP 455	Yergey, Alfred L.....	WP 373
Yan, Lu.....	MP 014	Yang, Xiaoyu.....	WP 493	Yergey, Alfred L.....	WP 382
Yan, Pin.....	MP 679	Yang, Xuemei.....	WP 395	Yeung, Alfred.....	WP 498
Yan, Ping.....	WP 507	Yang, Xuemei.....	MP 330	Yeung, Alfred.....	MOC pm 2:30
Yan, Ping.....	WP 513	Yang, Yanan.....	MP 351	Yeung, Edward.....	WP 425
Yan, Ping.....	ThP 684	Yang, Yanan.....	WP 152	Yeung, Edward S.....	ThP 220
Yan, Ping.....	MP 656	Yang, Yang.....	WOA am 09:30	Yew, Joanne Y.....	WOC am 08:50
Yan, Ping.....	WP 512	Yang, Yanou.....	MOF pm 3:50	Yi, Jizu.....	MP 665
Yan, Xinjian.....	TOA pm 2:30	Yang, Yanou.....	MOF pm 3:30	Yi, Yi.....	ThP 353
Yan, Xinjian.....	WP 378	Yang, Ya-Ting (Tina).....	TP 310	Yi, Zhengping.....	ThP 523
Yan, Xinjian.....	ThOA am 09:50	Yang, Yi.....	WP 693	Yim, Yong-Hyeon.....	MP 359
Yang, Bing.....	ThOA am 09:10	Yang, Ying Ying.....	TOD am 09:50	Yim, Yong-Hyeon.....	ThP 535
Yang, Bing.....	TOD am 09:10	Yang, Yinghang.....	MP 553	Yin, Hong.....	ThP 227
Yang, Charles.....	MP 411	Yang, Yingzhou.....	TP 244	Yin, Hongfeng.....	ThP 571
Yang, Chenxi.....	TP 086	Yang, Yingzhou.....	WP 263	Yin, Hongfeng.....	MP 298
Yang, Dan-Hui Dorothy.....	MP 553	Yang, Yong.....	ThP 307	Yin, Hongfeng.....	TP 129
Yang, Dong Sik.....	TOC am 09:30	Yang, Yong.....	ThP 576	Yin, Hongfeng.....	TOG pm 3:10
Yang, Fan.....	WP 341	Yang, Yu-Liang.....	ThP 330	Yin, Hongfeng.....	TP 183
Yang, Feng.....	WOA pm 3:10	Yang, Zhibo.....	WP 023	Yin, Hongfeng.....	MOB am 08:30
Yang, Fuquan.....	ThP 588	Yang, Zhibo.....	ThOB am 08:50	Yin, Hongfeng.....	MP 231
Yang, Guang-Zhong.....	ThP 391	Yannone, Steven.....	WP 694	Yin, Sheng.....	ThOF am 08:50
Yang, Guang-Zhong.....	ThP 392	Yao, Chunxiang.....	ThP 600	Yin, Xinmin.....	TP 656
Yang, Han-Yin.....	TP 378	Yao, Ikuko.....	WP 167	Ying, Liu.....	ThP 374
Yang, Heyi.....	ThP 372	Yao, Ikuko.....	TP 406	Ying, Sonia.....	MP 442
yang, hongmei.....	TP 164	Yao, Jinting.....	MP 179	Ying Han, Lai.....	WP 360
Yang, Hongqian.....	MOA pm 2:50	Yao, Jin-ting.....	MP 429	Yiu, Felix.....	WOF am 08:50
Yang, Hongqian.....	WP 398	Yao, Ming.....	MOF am 09:30	Yocum, Anastasia K.....	WP 389
Yang, Hongqian.....	WP 553	Yao, Ming.....	TP 092	Yoda, Akinori.....	ThP 521
Yang, Hua.....	ThP 636	Yao, Xudong.....	TP 449	Yol, Aleer M.....	TP 347
Yang, Hyang Hee.....	WP 244	Yao, Xudong.....	WP 479	Yoo, Chul.....	ThP 446
Yang, Hyang Hee.....	WP 245	Yao, Xudong.....	MP 643	Yoo, Ellie Jung-Hwa.....	WP 065
Yang, HyangHee.....	WP 264	Yap, Damian B.....	ThP 618	Yoo, Gene.....	ThP 450
Yang, Hyo-Jik.....	WP 030	Yaping, Yu.....	TP 500	Yoo, Hye Hyun.....	ThP 168
Yang, Hyo-Jik.....	WP 353	Yarborough III, Orlando.....	TP 535	Yoo, Jong Shin.....	ThP 628
Yang, Hyo-Jik.....	TP 113	Yarborough, Melanie L.....	ThP 490	Yoo, Jong Shin.....	WOD am 08:50
Yang, In-chul.....	MP 359	Yarborough, Wendell.....	ThP 602	Yoo, Jong Shin.....	TP 672
Yang, Jane.....	WP 454	Yarfi, Joe-Louis.....	WP 315	Yoo, Young Sook.....	MP 504
Yang, Jing.....	MP 337	Yasuda, Hiroyuki.....	MP 119	Yoon, Chang No.....	MP 504
Yang, Jiong.....	WP 665	Yasuda, Irene.....	MP 551	Yoon, Ho-Sung.....	ThP 342
Yang, Jiong.....	WP 182	Yasun, Emir.....	ThP 144	Yoon, Hye-Joo.....	WP 612
Yang, Jun.....	ThP 274	Yates, John.....	MP 461	Yoon, Seo Hyun.....	WP 245
Yang, Juncong.....	TP 689	Yates, John.....	WP 697	Yoon, Seo Hyun.....	WP 247
Yang, Juncong.....	ThP 685	Yates, John.....	ThP 407	Yoon, Seo Hyun.....	WP 246
Yang, Juncong.....	WP 642	Yates, John.....	ThOD am 10:10	Yoon, Seo Hyun.....	WP 244
Yang, Juncong.....	ThP 587	Yates, Nathan.....	TP 607	Yoon, SeoHyun.....	WP 264
Yang, Juncong.....	WP 633	Yates, Nathan.....	ThP 206	Yoon, So Hee.....	ThP 449
Yang, Junhai.....	ThP 431	Yates, Nathan.....	TP 693	Yoon, Sung Hwan.....	WOE am 08:30
Yang, Junhai.....	ThP 417	Yates, Sandy.....	TP 195	Yoon, Sung Hwan.....	MP 250
Yang, Lee L.....	WP 608	Yates, Zac.....	TP 128	Yoon, Sung Hwan.....	TP 055
Yang, Li.....	TP 422	Yates III, John.....	WP 379	Yoon, Sung-Hwan.....	MP 203
Yang, Li.....	ThP 319	Yatsuyanagi, Fumito.....	TP 343	York, Will.....	TP 526
Yang, Li.....	TOD pm 2:30	Ye, Ding.....	TP 380	Yoshida, Masaru.....	ThP 282
Yang, Li.....	ThP 223	Ye, Fangting.....	TP 370	Yoshida, Masaru.....	ThP 283
Yang, Lian.....	MP 437	Ye, Guofeng.....	ThOD pm 3:30	Yoshimura, Hidetoshi.....	TP 418
Yang, Lijie.....	TP 027	Ye, Hui.....	ThP 439	Yoshimura, Kentaro.....	WP 170
Yang, Min.....	WP 281	Ye, Hui.....	MP 471	Yoshioka, Susumu.....	WP 496
Yang, Min.....	TP 218	Ye, Hui.....	MP 473	Yost, Richard.....	ThP 441
Yang, Min.....	WP 347	Ye, Ke-Qiong.....	TOD am 09:10	Yost, Richard A.....	WP 409
Yang, Paul.....	MP 402	Ye, Sha Joshua.....	WP 168	Yost, Richard A.....	WP 205
Yang, Qian.....	MP 046	Ye, Sha Joshua.....	ThP 086	Yost, Richard A.....	MP 239
Yang, Qian.....	MP 048	Ye, Wenjie.....	WP 676	Yost, Richard A.....	ThP 238
Yang, Rong.....	TP 254	Ye, Xiaoxia.....	MP 579	Yost, Richard A.....	MP 080

Program code: M,T,W, Th = Day

O = Oral, P = Poster

Time or poster number

INDEX OF AUTHORS

Yost, Richard A.	ThP 426	Yuan, Yang.....	TP 275	Zeng, Erliang	TP 391
You, Changjun	ThOD pm 2:50	Yuan, Yuan.....	WP 709	Zeng, Hang	ThP 184
You, Jia	MP 454	Yuan, Zuofei.....	WP 073	Zeng, Jianing	MP 139
You, Youwen	ThP 374	Yuan, Zuo-Fei	WP 404	Zeng, Jianing	WP 241
Youhnovski, Nikolay.....	MP 151	Yuba-Kubo, Akiko.....	TP 406	Zeng, Lingfei	MP 613
Youm, Jeong-Rok	ThP 168	Yue, Chengyun	TP 254	Zeng, Lucy	TP 570
Youm, Jeong-Rok	ThP 169	Yue, Hao	TP 038	Zeng, Yu	WP 661
Youm, Jeong-Rok	ThP 170	Yue, Peng	TP 535	Zenka, Roman	ThP 403
Young, Brandy	ThP 267	Yukihira, Daichi.....	WP 692	Zenka, Roman M.	TP 650
Young, J. Bryce.....	ThP 093	Yukihira, Daichi.....	WP 231	Zennadi, Rahima	ThP 517
Young, J. Bryce.....	MOE pm 4:10	Yukihira, Daichi.....	TP 205	Zenobi, Renato	MP 366
Young, Michelle E.	WP 250	Yukinaga, Hideo	TP 215	Zenobi, Renato	ThP 001
Young, Nicolas	ThP 620	Yunfeng, Gao.....	TP 497	Zenobi, Renato	WP 567
Young, Nicolas L.....	ThP 621	Yurek, David A.....	ThP 262	Zenobi, Renato	MOD am 08:30
Young, Nicolas L.....	WP 514	Yurimoto, Hisayoshi.....	ThP 062	Zenobi, Renato	ThP 155
Young, Nicolas L.....	MP 513	Yuuki, Dai	WP 450	Zenobi, Renato	WOA am 09:30
Young, Nicolas L.....	TP 433	Zabka, Jan	WP 061	Zenobi, Renato	ThP 008
Young, Nicolas L.....	WP 710	Zabrouskov, Vlad	TP 680	Zenobi, Renato	TP 005
Young, Paul B.	TP 094	Zabrouskov, Vlad	MP 595	Zenobi, Renato	ThP 009
Young, Scott.....	TP 565	Zabrouskov, Vlad	TOE pm 3:50	Zenobi, Renato	ThP 551
Younos, Ibrahim.....	MOA pm 3:50	Zabrouskov, Vlad	TP 560	Zenobi, Renato	MP 028
Yow, Justin.....	TP 274	Zagorevski, Dmitri.....	MP 115	Zhai, Lailiang	WP 260
Ytterberg, A. Jimmy.....	WP 396	Zaharia, L. Irina	TP 274	Zhan, Zhaoqi	TP 081
Ytterberg, A. Jimmy.....	TP 659	Zaharris, Chelsey	MP 435	Zhang, Baichen	TP 194
Ytterberg, A. Jimmy.....	WP 553	Zahedi, René	MP 495	Zhang, Bing	MP 693
Yu, Cheng-Chou	MP 609	Zahedi, René	ThP 398	Zhang, Bing	TP 691
Yu, Chih-Sheng	MP 488	Zahedi, René P	MP 460	Zhang, Bing.....	TP 676
Yu, Christopher.....	TP 108	Zahid, Osama	WP 504	Zhang, Bing.....	ThOA am 08:30
Yu, Eizadora	TP 489	Zahrt, Thomas	WP 616	Zhang, Chengcheng	WP 385
Yu, Fengan	WP 350	Zaia, Joseph	TP 180	Zhang, Chunchao	WP 469
Yu, Heshui	WP 108	Zaia, Joseph	MP 235	Zhang, Cong.....	TP 587
Yu, Jau-Song	WP 509	Zaia, Joseph	MP 282	Zhang, Crystal	ThP 658
Yu, Kate	WP 347	Zaia, Joseph	TP 376	Zhang, Cunjie.....	WP 706
Yu, Kate	ThP 223	Zaia, Joseph	WOD pm 2:50	Zhang, Cunjie.....	TOA am 09:50
Yu, Kate	WP 108	Zaia, Joseph	MP 281	Zhang, Cunjie	WP 527
Yu, Kate	WP 359	Zaia, Joseph	MP 280	Zhang, Fan.....	ThP 645
Yu, Kate	ThP 319	Zaia, Joseph	WOD am 08:30	Zhang, Guoan	ThP 511
Yu, Kate	ThP 224	Zaikin, Vladimir.....	TP 340	Zhang, Guodong	WP 663
Yu, Kenneth	WP 590	Zaima, Nobuhiro	WP 450	Zhang, Guodong	MOG pm 3:50
Yu, KyungSang	WP 264	Zaitsu, Kei	WP 171	Zhang, Haixia	MP 233
Yu, Kyung-Sang	WP 247	Zakian, Virginia A.....	ThP 530	Zhang, Haixia	TP 691
Yu, Kyung-Sang	WP 245	Zalko, Daniel	WP 072	Zhang, Haixia	MP 693
Yu, Kyung-Sang	WP 244	Zamboni, Nicola	TP 716	Zhang, Haiying	ThP 485
Yu, Kyung-Sang	WP 246	Zamdborg, Leonid.....	WOA am 10:10	Zhang, Haizhen.....	MP 679
Yu, Li-Rong	ThOF pm 3:30	Zamfir, Alina	TOF am 08:30	Zhang, Haizhen.....	WP 390
Yu, Li-Rong	MP 625	Zamora, Ismael	TP 223	Zhang, Haizhen.....	TP 567
Yu, Long	MP 521	Zand, Robert	WP 469	Zhang, Han	TP 537
Yu, Lu	MP 536	Zandkarimi, Fereshteh	ThP 327	Zhang, Han	MP 559
Yu, Meng	MP 371	Zanetti, Gianpaolo.....	TP 649	Zhang, Hao	WP 532
Yu, Nola H.	MP 157	Zang, Li	TP 632	Zhang, Hao	TOE am 09:30
Yu, Pin-Jen.....	TP 356	Zang, Li	ThP 642	Zhang, Haoyue	MP 339
Yu, Qiaoling.....	WP 251	Zappardo, Raffaella	TP 683	Zhang, Heather.....	MOF am 10:10
Yu, Shaoxia	WP 142	Zarbl, Helmut	TP 312	Zhang, Heather.....	WOG pm 3:30
Yu, Shuai	TP 533	Zare, Richard	TP 303	Zhang, Hui	WOF am 08:50
Yu, Tianwei	TP 095	Zare, Richard N.....	TP 046	Zhang, Hui	ThP 191
Yu, Xiang	ThOE pm 3:10	Zavalin, Andrey I	TP 416	Zhang, Hui	TP 167
Yu, Xiang	WP 014	Zavalin, Andrey I	TP 415	Zhang, Hui	ThP 195
Yu, Xiao-Ying.....	TP 422	Zaw, Thiri	ThP 609	Zhang, Huimin	TP 496
Yu, Yanbao.....	MP 205	Zawadzka, Anna M.	ThP 512	Zhang, Huiping	ThP 617
Yu, Yanbao.....	WP 701	Zazzeroni, Raniero.....	TP 214	Zhang, Jialing	TP 037
Yu, Yi-Kuo.....	WP 499	Zazzeroni, Raniero.....	WP 094	Zhang, Jian	TP 108
Yu, Yi-Kuo.....	MP 464	Zee, Barry.....	WP 710	Zhang, Jian	WP 216
Yu, Yi-Kuo.....	WP 370	Zee, Barry.....	ThOA pm 3:50	Zhang, Jiang.....	MP 559
Yu, Ying-Qing	TP 483	Zee, Barry.....	MP 513	Zhang, Jiang.....	TP 713
Yu, Ying-Qing	TP 169	Zehr, R. Dan.....	WP 318	Zhang, Jiang.....	TOD pm 2:50
Yu, Ying-Qing	WP 557	Zeidan, Bashar	ThP 676	Zhang, Jiang.....	MP 561
Yu, Zhihao	MP 642	Zelem Baba, Milena	ThP 619	Zhang, Jiang.....	TP 006
Yuan, Bifeng.....	ThOD pm 2:50	Zelesky, Veronica	ThP 213	Zhang, Jianping	MP 610
Yuan, Huimin.....	WP 182	Zelesky, Veronica	ThP 191	Zhang, Jianping	ThP 406
Yuan, Min.....	MP 330	Zelesky, Veronica	ThP 195	Zhang, Jianqiu	WP 403
Yuan, Moucun.....	MOG am 08:50	Zelesky, Veronica	WP 276	Zhang, Jianqiu	MP 518
Yuan, Moucun.....	MOG pm 4:10	Zelesky, Veronica	WOF am 08:50	Zhang, Jianqiu	MP 469
Yuan, Weiwei.....	TP 259	Zeller, Martin.....	ThP 384	Zhang, Jianqiu	ThP 090
Yuan, Weiwei.....	MP 162	Zeller, Martin.....	MP 092	Zhang, Jianye	MP 377
Yuan, Yang.....	WP 252	Zeman, Stacey L.	ThP 136	Zhang, Jie	WP 102
Yuan, Yang.....	WP 348	Zemski-Berry, Karin A.....	MP 255	Zhang, Jing	MP 462
Yuan, Yang.....	WP 152			Zhang, Jing	MP 457

INDEX OF AUTHORS

Zhang, Jingyao (Isabella)	MP 045	Zhang, Yuesheng	MP 153	Zhong, Feng	ThP 314
Zhang, Jun	WP 363	Zhang, Yukui	TP 405	Zhong, Hongying	TP 571
Zhang, Jun	ThP 186	Zhang, Yun	ThP 031	Zhong, Jun	TP 383
Zhang, Jun	ThP 563	Zhang, Yuntao	ThP 548	Zhong, Jun	TP 638
Zhang, Junmei	ThP 453	Zhang, Yuzhuo	WP 445	Zhong, Ling	ThP 521
Zhang, Junsheng	TP 027	Zhang, Zheng-Xiang	MP 473	Zhong, Ling	TP 534
Zhang, Kai	TP 556	Zhang, Zhihong	WP 122	Zhong, Wendy	WP 665
Zhang, Kai	TP 369	Zhang, Zhiping	MOA pm 3:10	Zhong, Yueyang	WOB am 09:10
Zhang, Kai	MP 402	Zhang, Zhiping	MP 047	Zhongping, Yao	WP 360
Zhang, Kai	MP 413	Zhang, Zhiping	TOE pm 2:50	Zhou, Bin	TP 204
Zhang, Kai	TP 351	Zhang, Zhiping	TOE pm 4:10	Zhou, Bo	ThP 372
Zhang, Kangling	TP 712	Zhang, Zhixin	TP 381	Zhou, Changhua	MP 675
Zhang, Kerong	WOG pm 2:30	Zhang, Zhixin	MOA pm 3:50	Zhou, Dawei	WP 260
Zhang, Kerong	ThP 188	Zhang, Zhongqi	TP 442	Zhou, Dawei	TP 173
Zhang, Kun	TOD am 09:10	Zhang, Zhongqi	ThP 254	Zhou, Guangchun	TP 245
Zhang, Li	ThP 327	Zhang, Zichuan	MP 472	Zhou, Haihong	ThP 533
Zhang, Li	ThP 598	Zhang, Zichuan	ThP 439	Zhou, Haihong	TP 678
Zhang, Li	ThP 673	Zhang, Zong-Ping	TP 256	Zhou, Heather	TP 607
Zhang, Li-Kang	TP 084	Zhang, Zong-Ping	MP 163	Zhou, Hong	ThP 318
Zhang, Linqi	TP 642	Zhang, Zong-Ping	ThP 176	Zhou, Hong	WP 098
Zhang, Lu	MP 580	Zhao, Cheng	MOG pm 3:10	Zhou, Houjiang	WOA pm 2:50
Zhang, Nan	WP 240	Zhao, Harry	WP 251	Zhou, Jianhong	ThP 625
Zhang, Nan	ThP 175	Zhao, Harry	ThP 115	Zhou, Jianjun	MP 337
Zhang, Nawei	TP 642	Zhao, Harry	WP 254	Zhou, Manshui	TP 039
Zhang, Ping	ThP 542	Zhao, Harry	WP 253	Zhou, Manshui	TP 144
Zhang, Pingbo	WP 511	Zhao, Harry	WP 667	Zhou, Mowei	WOB pm 3:50
Zhang, Qian	TP 475	Zhao, Hongjuan	MOF pm 4:10	Zhou, Mowei	WOE pm 3:45
Zhang, Qiang	TP 392	Zhao, Jamie	WP 238	Zhou, Ping	MP 540
Zhang, Qiang	MP 675	Zhao, Junfang	ThP 004	Zhou, Qinwei	ThOF am 09:10
Zhang, Qiangqian	TP 254	Zhao, Junfang	ThP 006	Zhou, Qinwei	TP 112
Zhang, Qibin	WP 234	Zhao, Keji	TP 433	Zhou, Ruokun	MP 315
Zhang, Qibin	WP 220	Zhao, Lei	TP 688	Zhou, Ruokun	MP 338
Zhang, Qingfen	ThP 235	Zhao, Lei	WP 512	Zhou, Shanshan	TP 613
Zhang, Sheng	ThP 307	Zhao, Liang	ThP 572	Zhou, Wanlong	MP 416
Zhang, Sheng	TP 519	Zhao, Libo	WOA am 08:30	Zhou, Wen	TP 176
Zhang, Sheng	ThP 576	Zhao, Ningwei	MP 429	Zhou, Xiao	WP 562
Zhang, Shucha	ThP 684	Zhao, Peng	WOD am 09:10	Zhou, Xiaoping	WOF am 08:50
Zhang, Shucha	WP 513	Zhao, Rui	WOA am 08:50	Zhou, Ying	MP 235
Zhang, Su-chun	TP 661	Zhao, Rui	WOA pm 3:10	Zhou, Yu	WP 658
Zhang, Suhong	WOC am 09:10	Zhao, Rui	TP 567	Zhou, Yuping	MP 635
Zhang, Terry	ThP 050	Zhao, Rui	ThP 211	Zhou, Yuping	MP 628
Zhang, Tian	ThP 617	Zhao, Weiping	TP 327	Zhou, Zhaohui Sunny	TP 109
Zhang, Wanjuan	MP 477	Zhao, Xiao-Lei	MP 401	Zhou, Zhaohui Sunny	ThP 478
Zhang, Wei	WP 253	Zhao, Xiaoning	TP 348	Zhou, Zhigui	TP 037
Zhang, Wei	WP 667	Zhao, Xiaoning	WP 024	Zhou, Ziniu	MP 611
Zhang, Wujuan	MP 357	Zhao, Xiling	WP 420	Zhu, Chenxi	ThP 023
Zhang, Xiang	TP 658	Zhao, Xueheng	MP 357	Zhu, Jiangjiang	MP 543
Zhang, Xiang	TP 656	Zhao, Xuemei	TP 693	Zhu, Jianhui	TP 507
Zhang, Xiang	WP 362	Zhao, Yang	WP 108	Zhu, Jie	WP 511
Zhang, Xiang	TP 657	Zhao, Yanmei	ThOA am 09:10	Zhu, Jinghua	TP 625
Zhang, Xiang	WP 684	Zhao, Yingming	MOA pm 3:10	Zhu, Lei	TP 330
Zhang, Xiang	WP 363	Zhao, Yingming	TP 436	Zhu, Liang	MOD am 08:30
Zhang, Xiangmin	ThP 523	Zhao, Yingxin	TP 605	Zhu, Lijia	TP 244
Zhang, Xiangyang	TOE am 09:10	Zhao, Yue	ThP 177	Zhu, Lijia	WP 263
Zhang, Xiaolin	TP 253	Zhao, Yue	MP 162	Zhu, Mary	ThP 142
Zhang, Xiaoqiang	TP 027	Zhao, Yue	TP 280	Zhu, Min	ThP 142
Zhang, Xin	WP 521	Zhao, Yue	TP 259	Zhu, Ming	TOD am 09:10
Zhang, Xing	WP 483	Zhao, Yuli	MP 384	Zhu, Mingshe	ThP 188
Zhang, Xinrong	WP 480	Zhao, Yuli	TOB pm 2:50	Zhu, Mingshe	MOF am 09:30
Zhang, Xinxin	WP 528	Zhao, Yuli	MP 383	Zhu, Mingshe	ThP 639
Zhang, Xinxin	WP 374	Zhao, Zhenjun	MP 248	Zhu, Mingshe	WOG pm 2:30
Zhang, Xu	ThP 130	Zhao, Zhiyang	TP 241	Zhu, Mingshe	TP 327
Zhang, Yan	TP 387	Zhao, Zhongdan	TOC pm 3:30	Zhu, Mingshe	ThP 198
Zhang, Yan Ling	MP 183	Zheng, Chunxiang	TOD pm 2:30	Zhu, Thant	MP 663
Zhang, Yan Ling	ThP 318	Zheng, Hui	TP 544	Zhu, Xiang	ThP 463
Zhang, Yan Ling	MP 098	Zheng, Jiamin	TP 207	Zhu, Xiaochun	TP 217
Zhang, Yangjun	MP 477	Zheng, Lingxing	MP 048	Zhu, Xiaodong	WP 097
Zhang, Ying	WP 076	Zheng, Nancy	MP 163	Zhu, Xin	WP 558
Zhang, Ying	ThP 364	Zheng, Suping	TP 163	Zhu, Xin	WP 556
Zhang, Ying	TP 490	Zheng, Xiaojing	TP 118	Zhu, Xuwei	TP 652
Zhang, Ying	MP 074	Zheng, Xueyun	ThP 668	Zhu, Yongdong	TP 240
Zhang, Yizhong	WP 663	Zheng, Xuyen	TOD pm 4:10	Zhu, Yongxin	WP 662
Zhang, Yizhong	MOG pm 3:50	Zheng, Yong	WP 706	Zhu, Zheng-Jiang	ThP 146
Zhang, Yue	MOA am 09:50	Zheng, Yong	WP 527	Zhu, Zheng-Jiang	ThP 147
Zhang, Yue	ThP 627	Zheng, Yong	TOA am 09:50	Zhu, Zhenqian	TP 186
Zhang, Yuening	ThP 266	Zheng, Yupeng	ThP 605	Zhu, zihua	ThOC pm 3:10
Zhang, Yuening	MP 556	Zhong, Bo	ThP 174	Zhu, Zihua	TP 422

INDEX OF AUTHORS

Ziadeh, Bassem	WP 464	Zivkovic, Angela.....	ThP 484	Zuber, Kai	MP 108
Ziarelli, Fabio.....	TP 013	Zivkovic, Angela.....	MP 275	Zucchetti, Massimo.....	WP 237
Zickus, Michael	WP 709	Zlotnick, Adam.....	MOB pm 3:50	Zucht, Hans-Dieter	MP 502
Zickus, Michael	ThP 619	Zoppis, Italo	TP 649	Zucker, Steven M.	ThP 043
Zieglgänsberger, Walter	ThOA pm 2:50	Zorc, Maggy	WP 177	Zucker, Steven M.	TOE pm 2:30
Zielinska, Dorota F.	TP 641	Zou, Hanfa	WOA pm 2:50	Zukocinski, Grzegorz.....	TP 093
Ziems, Bjoern	TP 615	Zou, Yun Yun.....	TP 351	Zulich, Alan	ThOC pm 4:10
Zimmer, Dieter	ThP 109	Zou, Yun Yun.....	WP 221	Zulkoski, John.....	TOF am 09:30
Zimmerman, Lisa	WP 635	Zou, Yun Yun.....	TP 369	Zumwalt, Amy	TP 170
Zimmerman, Lisa	TOA am 10:10	Zovinka, Edward P.....	WP 313	Zuniga, Azeret	MP 164
Zimmerman, Lisa J.	MP 693	Zubarev, Roman	MOA pm 2:50	Zuniga, Azeret	TP 207
Zimmerman, Lisa J.	TP 691	Zubarev, Roman	WP 553	Zuniga, Azeret	TP 200
Zimmerman, Tyler A.....	MP 569	Zubarev, Roman	TP 397	Zuo, Ming.....	WP 251
Zimmermann, Carolyn M.	WP 007	Zubarev, Roman	WP 486	Zuo, Shuai	MP 211
Zingsheim, Morgan.....	ThP 523	Zubarev, Roman	MP 497	Zurek, Gabriela	WP 305
Zink, Erika	ThP 211	Zubarev, Roman	TP 659	Zurek, Gabriela	TP 195
Zinn, Gregory M.	TP 366	Zubarev, Roman	WP 398	Zurek, Gabriela	ThP 231
Zinnel, Nathanael F	TP 154	Zubarev, Roman	WP 464	Zweigenbaum, Jerry	WP 222
Zirah, Severine	ThP 447	Zubarev, Roman A.....	MP 430		

60TH ASMS MAY 20 - 24, 2012

VANCOUVER, BC